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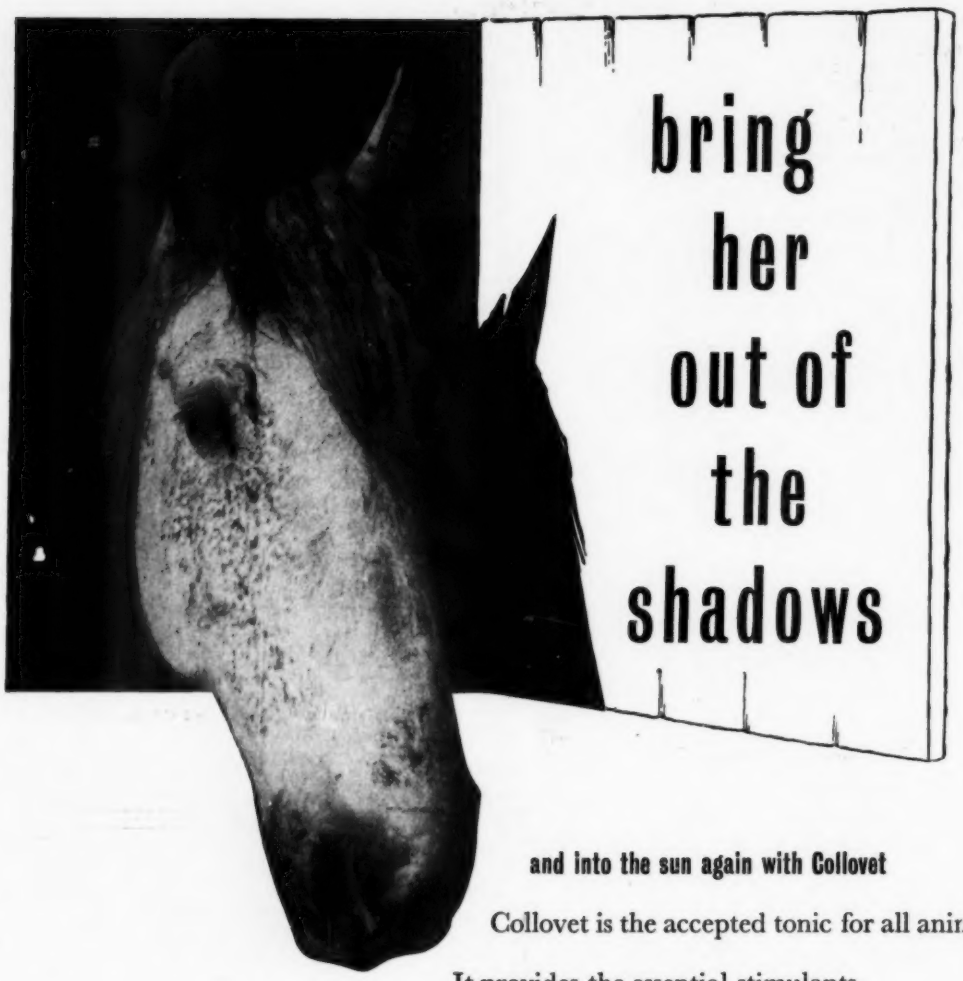

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Veterinary Surgeons and Patenting

In the light of a Memorandum on this subject sent to the Royal College of Veterinary Surgeons by the Secretary of the Southern Region of the Association of Veterinary Teachers and Research Workers, the Finance and General Purposes Committee of the College appointed a sub-committee in January of this year to consider and report on patenting as it applies to the veterinary profession.

The subject has acquired a current interest in view of the virtual disappearance of the distinction between biological and chemical substances. In the past there has existed a view that veterinary surgeons and members of the medical profession should not patent discoveries they might make in order to secure a monopoly; in the light of their guiding ethical principles they should rather put the welfare of their patients, human or animal, before any question of material gain. However, recent developments have made this view untenable, and there has been at least one striking example of the commercial exploitation, by another country, of a substance first isolated here, and this in a manner not always in the best interests of the public, nor in the economic interests of Great Britain.

Having these considerations in mind, the R.C.V.S. sub-committee expressed the view that: "not only is there no ethical objection to the taking out of patents by members of the profession but that it is most desirable that veterinary surgeons should, so far as possible, patent their discoveries, in their own interest and in the interest of the general public. We suggest that the Council (of the R.C.V.S.) should take an early opportunity of publishing their views on this matter."

The sub-committee suggested, further, that those veterinary surgeons who were in a position to patent their discoveries would be well advised to do so through the National Research Development Corporation, a body set up by Act of Parliament in 1948 to act as an assignee of patents and to administer them in the public interest. The Corporation is an independent body, having a board of businessmen and scientists whose advice and guidance would be of the greatest practical assistance to those wishing to patent veterinary discoveries. The subsequent exploitation of such discoveries would be a matter for negotiation between the Corporation and the individual.

The foregoing applies in the main to veterinary surgeons in private practice and to any others not bound by contract to a research institute, university, or commercial company. In these latter cases there is nearly always an agreement between the parties making discoveries by individuals or teams of research workers partly or wholly the property of their employers. Such contracts may include a clause allowing some reward for a discovery of importance, and it would seem to be prudent for those entering into service contracts with third parties to be satisfied that their reasonable aspirations were covered. It is then for their principals or directors to arrange the practical details of the patenting of scientific discoveries and of their exploitation. In such cases the National Research Development Corporation would not wish to intervene.

It is within recent memory that a research team in a Scottish university veterinary school made a discovery of great value, and since others may do so at any time it is hoped that these observations will be of use, even though they apply, in the main, to independent workers.

Field Trials with Synergised Phenothiazine

BY

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AND

D. A. RAWES

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SUMMARY.—Field trials with a coroxon-phenothiazine (1.5/200 wt/wt) mixture against nematodes in lambs are described.*

The anthelmintic efficiency of the mixture at 200 to 300 mg. per kg. was compared with that of a standard phenothiazine wettable powder at 500 to 800 mg. per kg. and was assessed by post-mortem worm counts on 150 lambs. The mixture was as effective as phenothiazine against nematodes of the abomasum and much more effective against those of the small intestine.

A series of observations on weight gains is also recorded. A good clinical response was achieved in flocks heavily infested with intestinal Trichostrongylus *spp. with greater improvement following the use of synergised phenothiazine. The small dose rate of the coroxon/phenothiazine mixture was a distinct practical advantage.*

Introduction

MORE than 20 years ago, phenothiazine became established as an anthelmintic of merit in the treatment of parasitic gastro-enteritis of sheep and for this purpose it has maintained a premier position. Sustained popularity over such a long period implies a good record of success, but for a number of reasons phenothiazine still falls short of the ideal anthelmintic. The two principal reasons for this are, firstly, its relative lack of efficiency against certain important parasites, notably the intestinal species of *Trichostrongylus*, known to farmers the world over as "black scour" or "bankrupt" worms; and secondly, the rather large size of the dose required.

Attempts to remedy these deficiencies have centred mainly on improving the purity of the compound and on reducing the particle size. The outcome of extensive investigations on these lines is summed up by Forsyth, Scott and Bainbridge (1961).

Recently, Kingsbury (1961a, b) has adopted a different approach to the problem of improving the anthelmintic efficiency of phenothiazine and, at the same time, of effecting a substantial reduction in the dose required. He has shown that the addition of very small quantities of certain organo-phosphorus compounds to phenothiazine promotes a higher activity against several sheep nematodes and in particular against the intestinal species of *Trichostrongylus;* and further, that this can be achieved at a dose rate of about 200 mg. per kg. of commercial grade phenothiazine compared with the normal recommended rate of at least 500 mg. per kg. Malone (1961) has shown that a mixture of this kind has a reasonably wide margin of safety in use, a very important point since many organo-phosphorus compounds tend to carry a rather unpredictable toxic hazard.

The present paper deals with the use of an organophosphorus/phenothiazine mixture in field trials under conditions of normal farming practice in England, during the spring, summer and autumn of 1960.

Material and Methods

1. *Anthelmintics*

The experimental anthelmintic chosen for the trials was designated "P90C" and consisted of a mixture of coroxon and technical phenothiazine of 90 per cent. purity with approximately 80 per cent. by weight of particles less than 10 microns and 45 per cent. less than 5 microns. This was formulated as a wettable powder which, when diluted at the rate of 1 lb. to 2 pints of water, gave a drench containing 7.77 g. of phenothiazine and 58.5 mg. of coroxon per fluid ounce. The desired dose level was of the order of 200 to 300 mg. per kg. of phenothiazine and 1.5 to 2.5 mg. per kg. of coroxon and this was approximately achieved by the following dosing schedule:—

Sheep under 25 lb. (11 kg.) ...	¼ fl. oz.
Sheep 25 to 50 lb. (11 to 23 kg.)	½ fl. oz.
Sheep 50 to 100 lb. (23 to 45 kg.)	1 fl. oz.
Sheep above 100 lb. (45 kg.) ...	1½ fl. oz.

For comparative purposes, equal numbers of sheep were dosed with a standard phenothiazine wettable powder exactly the same as that included in the mixture. This product was used at the recommended dose of 10 g. or 20 g. according to size and age of the sheep, resulting in most cases in a dose level within the range 500 to 800 mg. per kg.

A dosing pistol was used throughout and no difficulties in administration were encountered with either anthelmintic.

2. *Experimental Animals*

Observations on anthelmintic efficiency or weight gains or both were made on 12 different flocks (designated A to I and X to Z) in the counties of Essex, Gloucester, Hereford, Kent, Leicester, Oxford and Sussex.

* Coroxon = 0·0 diethyl 0-(3-chloro-4-methyl-coumarin-7 yl) phosphate.

All animals in these trials were from the 1960 lamb crop and in each flock approximately 30 received P90C, 30 received phenothiazine and 30 were left untreated.

Flocks A, D and G were treated 3 times at monthly intervals. The lambs were weighed at each dosing and again one month after the last dose. *Post-mortem* worm counts were made on a proportion of the lambs after the first dose in Flock A and after the final dose in all 3 flocks.

Flocks B and E were treated 3 times at 3-weekly intervals. Weights were recorded each week up to 3 weeks after the last dose. *Post-mortem* worm counts were done on a proportion of the lambs after the final dose.

There was no clinical evidence of parasitism in any of these 5 flocks except in flock G during the late summer.

Flocks C, F, H and I were selected because outbreaks of parasitic gastro-enteritis were reported in them. They were treated only once and a proportion of the lambs were slaughtered 4 or 5 days after and worm counts determined.

Flocks X, Y and Z were treated 3 times at monthly intervals. The sheep were weighed at each dosing and again one month after the final dose. None of the animals was slaughtered.

Anthelmintic efficiency was assessed by comparing the mean worm counts of groups of 5 lambs, slaughtered 4 or 5 days after treatment, with the mean worm counts of groups of 5 undosed controls slaughtered at the same time. For this purpose, groups carrying closely comparable infestations were selected on the basis of worm egg counts performed just before treatment. It is realised that this method is not as satisfactory as the classical " critical " tests but the numbers and distances involved made the latter procedure impracticable. Animals were killed and worm counts made in various flocks during the months of May, June, July, September and December thus allowing for changes in the seasonal incidence of the parasites.

3. *Toxicity Trials*

In addition to the sheep dosed in the trials recorded here, another 14,000, including many pregnant ewes, have been treated to make sure of the safety of P90C.

Results and Discussion

Anthelmintic Efficiency

The data relating to anthelmintic efficiency are set out in Table I and show the mean worm counts of groups of treated and untreated lambs, 5 animals in each group. The comparative counts for each group are set out against the flock identity letters and time of treatment and are arranged so that all results for each parasite are collected together.

Some species, *e.g. Bunostomum trigonocephalum* were only poorly represented, or were absent altogether from all the flocks and the trials provided no information about them; some, *e.g. Cooperia curticei*, appeared in numbers in only a few of the flocks, while others, *e.g.* intestinal *Trichostrongylus* spp., occurred in but small populations until late in the summer. Because of this, there is a variation in the number of flocks providing evidence of

TABLE I
MEAN NUMBERS AND PERCENTAGE REDUCTIONS OF WORMS IN SHEEP TREATED WITH PHENOTHIAZINE AND P90C AND SUBSEQUENTLY SLAUGHTERED

Parasites and flock identities	Mean worm counts of experimental groups 5 sheep in each group			Per cent. reduction in numbers of worms compared with controls	
Abomasal worms	Undosed controls	Dosed with phenothiazine	Dosed with P90C	Phenothiazine group	P90C group
				Per cent.	Per cent.
Trichostrongylus axei					
F (Sept.)	1,169	153	95	87	92
G (Sept.)	3,073	1,245	1,291	59	58
H (Sept.)	1,702	403	148	76	91
I (Dec.)	3.680	685	791	81	78
Ostertagia spp.					
A (May)	462	165	185	64	60
B (June)	360	80	40	78	89
C (June)	8,493	3,186	4,023	62	53
A (July)	1,283	1,166	1,255	9	2
D (July)	6,797	1,157	884	83	87
E (July)	540	660	20	0	96
F (Sept.)	4,922	513	1,793	90	64
G (Sept.)	3,827	998	3,048	74	20
H (Sept.)	9,404	557	2,984	94	68
I (Dec.)	2,063	819	33	61	98
Haemonchus contortus					
F (Sept.)	1,977	33	7	98	99
Intestinal worms					
Nematodirus spp.					
A (May)	171	145	59	15	66
B (June	4,302	2,482	200	42	95
C (June)	5,145	1,550	625	70	88
A (July)	12,158	10,179	1,001	16	92
D (July)	2,424	2,043	744	16	70
E (July)	5,740	6,743	0	0	100
F (Sept.)	2,186	542	153	75	93
G (Sept.)	1,562	529	102	67	93
I (Dec.)	2,081	410	46	80	98
Trichostrongylus spp.					
C (June)	2,930	1,750	300	40	90
A (July)	536	727	131	0	76
D (July)	675	569	13	17	98
F (Sept.)	3,052	1,504	143	51	95
G (Sept.)	23,610	10,693	3,104	55	87
H (Sept.)	25,913	9,791	4,540	62	82
I (Dec.)	8,800	4,816	1,053	46	88
Cooperia curticei					
F (Sept.)	601	291	20	52	97
G (Sept.)	1,716	126	340	93	80
I (Dec.)	784	0	7	100	99
Strongyloides papillosus					
A (July)	216	122	27	43	87
D (July)	748	598	119	20	84
F (Sept.)	2,046	974	60	52	97
G (Sept.)	432	366	67	15	84
I (Dec.)	956	698	279	27	71

anthelmintic activity against any particular parasite. *Trichuris ovis* was ubiquitous, though infestations were never more than moderate. Neither anthelmintic was effective. The incidence both of *Chabertia ovina* and *Oesophagostum venulosum* was sporadic and low so that there was little evidence concerning their susceptibility to these drugs but there was an indication that it was only moderate.

Abomasal Worms

Trichostrongylus axei. Efficiency of both anthelmintics was good except in Flock G where the response was relatively poor.

Ostertagia spp. Both *O. circumcincta* and *O. trifurcata* occurred, with the former greatly predominating. Marked variation in the performance of both anthelmintics was noted, ranging from almost complete failure to high efficiency. It is difficult to account for this variation but observations suggest that it may be connected with the age of the worm population and the immune status of the sheep.

It is well known that *Ostertagia* spp. are capable of producing massive infestations early in spring; our observations show that considerable numbers may also occur through summer and autumn.

Haemonchus contortus. Only one infestation was encountered (Flock F). Efficiency of both anthelmintics was very high.

Intestinal Worms

Nematodirus spp. Both *N. filicollis* and *N. battus* were encountered with the former species predominant. Up to the end of July, phenothiazine gave a poor performance compared with P90C (Flocks A, B, C, D, E). Later, against ageing infestations (Flocks F, G, I), phenothiazine showed an improved and P90C a very high efficiency.

Trichostrongylus spp., *T. vitrinus* and *T. colubriformis* occurred in about equal proportions. Against these species phenothiazine gave results ranging from complete failure to moderate efficiency. In contrast, P90C showed throughout high or very high efficiency.

Cooperia curticei. Rather light infestations occurred in three flocks late in the year. The activity of phenothiazine varied from moderate to very high and that of P90C was consistently very high.

Strongyloides papillosus. Infestations with this species, which is of doubtful pathogenicity, were generally light. Phenothiazine was ineffective but P90C gave consistently good results.

Summing up these observations, the indications are that P90C, at approximately half the normal dose of standard phenothiazine, is as active as the latter against *T. axei, Ostertagia* spp., *H. contortus* and *C. curticei*, about twice as effective against *Nematodirus* spp., and *Trichostrongylus* spp., and nearly three times as efficient against *S. papillosus*. The results obtained under field conditions confirm the observations made by Kingsbury in his initial experiments.

It was noteworthy that no infestations of clinical significance were encountered in the early part of the summer, a consequence no doubt of the exceptionally dry weather prevailing in late April, May and most of June. Later, with the abundant rain, infestations built up and some high worm counts were recorded. This difference is reflected in the weight gains, which are recorded in Table II.

TABLE II
MEAN WEIGHT GAINS (IN LB.) OF SHEEP DOSED WITH PHENOTHIAZINE AND P90C COMPARED WITH THOSE OF UNTREATED CONTROLS

Flock	No. of doses	Period covered	Experimental groups: Undosed controls	Dosed with phenothiazine	Dosed with P90C
B	3	3rd May– 5th July	26·8	27·7	28·1
D	3	18th May–17th Aug.	34·6	39·0	35·8
A	3	20th May–12th Aug.	36·2	35·3	35·1
X	3	24th May–21st July	23·8	25·7	24·9
E	3	26th May–14th July	17·8	16·8	16·9
G	3	12th Aug.–10th Nov.	8·4	14·8	20·3
Z	3	21st Sept.–18th Nov.	13·5	15·8	18·2
Y	3	11th Oct.– 8th Dec.	–2·2	3·7	4·8

Up to the end of June, nematode infestations were very low, and it was not until August and later that evidence of parasitic gastro-enteritis was seen. Under the circumstances, no worthwhile weight gain advantage for the treated groups over the controls was recorded in the earlier trials; neither did the act of dosing nor the intake of anthelmintics depress the growth rate of healthy lambs.

From mid-August onwards, however, with much heavier infestations, a different picture was presented. In all 3 flocks under observation the treated groups showed a distinct weight gain advantage over the controls with a balance in favour of the P90C groups. It seems likely that the better response to P90C was mainly due to the greater effect of this compound against intestinal *Trichostrongylus* spp.

During the toxicity trials in which over 14,000 sheep including many pregnant ewes were dosed with P90C, no toxicity was observed except in the case of 3 lambs which died after the inadvertent administration of more than 3 times the recommended dose.

Conclusions

During these field trials the superiority of P90C over phenothiazine was amply demonstrated. Not only was its efficiency as an anthelmintic much greater and more reliable but the smaller dose was a distinct advantage especially in the case of young lambs. The small volume of drench enabled experienced operators to treat flocks quickly and safely whilst at the same time avoiding staining of the fleece.

On those farms where parasitic gastro-enteritis was present, in some cases despite previous dosing with standard phenothiazine, a single treatment with P90C stopped scouring in the sheep and produced a marked clinical improvement.

The addition of coroxon to phenothiazine to give

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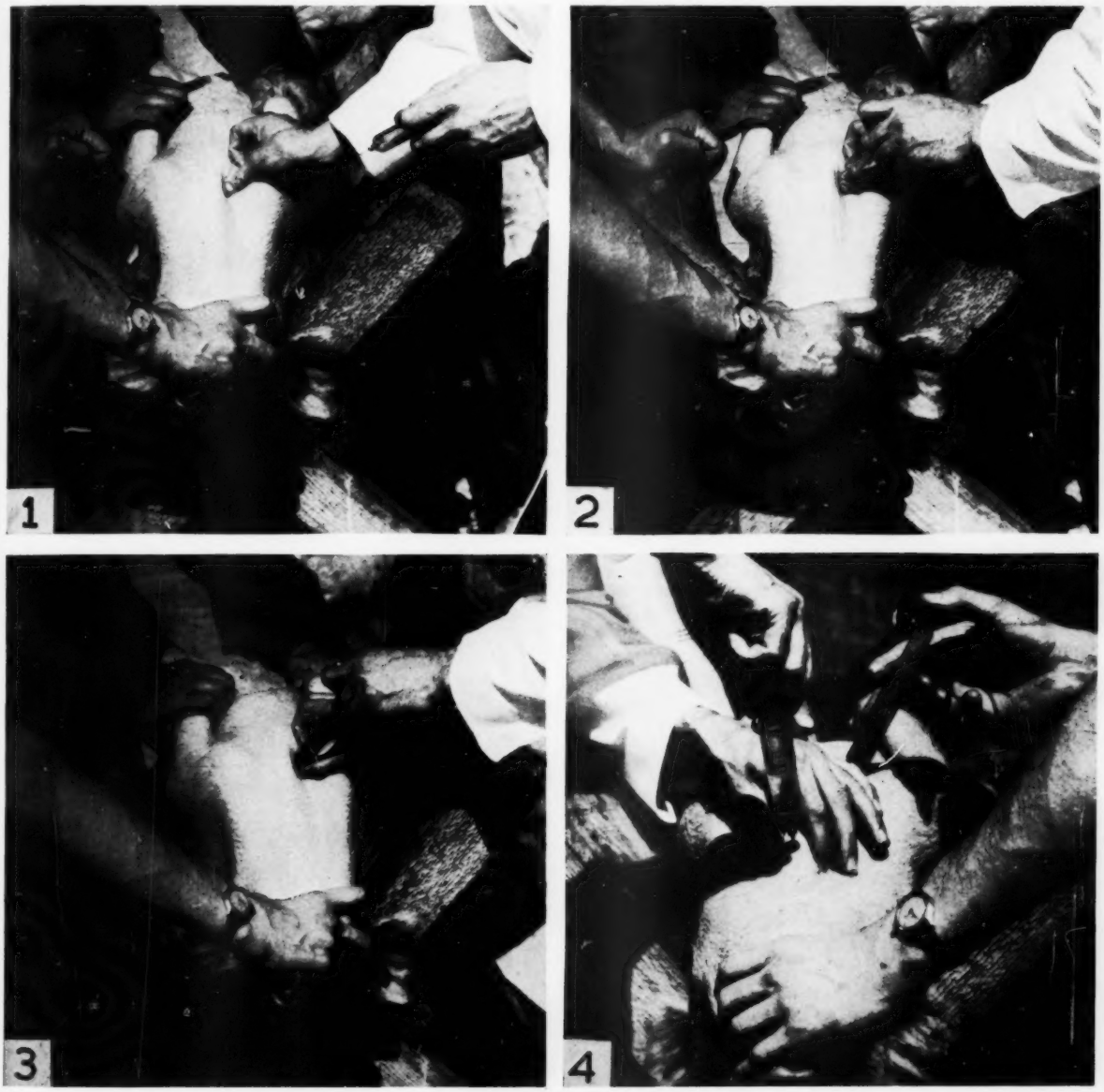
A. MACKENZIE.—OBSERVATIONS ON ANTERIOR VENA CAVA VENEPUNCTURE IN THE PIG



FIGS. 1 to 3.—Stages in the technique of anterior vena cava venepuncture in the pig.
FIG. 4.—Intratracheal inoculation of pig, maintained in anaesthesia with thiopentone sodium from syringe kept in position in anterior vena cava.

at this moment, the dog crowled from beneath the house and ran weakly away uttering low moans. None of the onlookers made any attempt to stop it. The author and the lay assistant pursued the dog through several back yards (there were no fences) and finally lassoed it. To save the animal further distress it was shot on the spot.

Post-mortem *Examination.* A septic wound was found encircling the neck. This wound was some 3 cm. in depth penetrating the skin, subcutaneous tissue and cervical muscles. A loop of string was discovered in the depths of the wound. The swelling of the head was oedematous due to the obstruction of the venous and lymphatic drainage. There was also some oedema of the left hind leg, presumably due to circulatory failure.

Case 2

Subject. Young local crossbred terrier type dog.

History. A coloured woman telephoned to say that her neighbours had shut up their house and gone away. Their dog was left behind and appeared to have "something" wrong with it. The author and his wife drove to the house to collect this dog, and on arrival numerous people complained about the animal and made an unenthusiastic search for it. The author and his wife explored back yards, rubbish dumps and the local bush without success. The next day the lay assistant was sent to search, and after some hours returned with the dog.

Symptoms. A piece of string projected from a wound 3 to 4 cm. in depth encircling the neck. The exposed tissues, including severed muscle, were dry and there was no evidence of sepsis. The dog was infested with Brown Dog Ticks (*Rhipicephalus sanguineus*). (See photograph.)

Case 2.

Diagnosis. Ligature of the neck.

Euthanasia was carried out.

Discussion

There are numerous stray dogs on the island of New Providence. Some of these are almost wild, roaming the bush in packs and entering the city to raid garbage cans and refuse dumps. Nursing bitches are often found in quiet spots, and their puppies, which are quite attractive, may easily be taken as pets. In the coloured quarters of the city there are few fenced gardens and the puppies are tied with a noose of string round the neck to stop them straying. The growing puppy becomes strong enough to break the string or bite through it and wanders off to become a stray. As the dog grows the string becomes tight around the neck causing pressure necrosis. The end result is the type of case described.

Ligature of the neck is a convenient name for the condition. Such terms as cervical ligature or pericervical necrosis can be ambiguous.

Both the incidents described took place in mid-afternoon, in June and July respectively, in shade temperatures of 90° F. with very high humidity, in places where biting insects were much in evidence. This type of exercise can be recommended only to those who wish to lose weight rapidly. Fortunately, the biting insects in the Bahamas do not transmit any human disease, although their attentions are painful.

The Bahamas Government and the Bahamas Humane Society are very concerned about the stray dogs and are combining to deal with the problem. The conditions under which those responsible for the campaign must work and the difficulties they will encounter are exemplified in these cases.

Acknowledgments.—The author would like to thank the authorities of the Royal Veterinary College and those of the Bahamas Humane Society for making his visit possible.

Clinical Note

A Case of Urinary Bladder Prolapse in the Cow

J. R. BRUNSDON

Glastonbury, Somerset

Subject. Seven-year-old Ayrshire cow.

History. The owner stated that the cow calved to time, commencing with the appearance of a "water bladder" at 6 a.m. and the appearance of a calf's front legs and head at 8 p.m. when he gave assistance himself. During calving, he observed the appearance of another "bladder" which he thought was part of the cleansing. The cow cleansed during the day but this other bladder remained protruding through the vulva. The cow was moderately distressed, feeding at intervals, and had not been observed to micturate all day.

Examination. At 5 p.m., when called to examine the cow, a bladder-like prolapse about 9 inches in diameter protruded from the vulva. This seemed to contain some fluid, and the protrusion was traced to the opening of the urethra which it blocked.

Diagnosis. A diagnosis of partial urinary bladder prolapse was made.

Treatment. The prolapse was carefully replaced through the dilated urethral opening, the procedure taking about 10 minutes; although the cow heaved

(*Concluded at foot of col. 1 overleaf*)

Dilatation of the Abomasum in a Cow

BY

N. B. ORFEUR

Langport, Somerset

SUMMARY.—A description is given of one case of dilatation of the abomasum in a cow.

The differences between this case and those described by other authors are discussed.

Introduction

DILATATION of the abomasum, with or without torsion, would appear to be an uncommon condition in cattle in Great Britain.

Richardson (1956) described 1 case, and Neal and Pinsent (1960) described 9 cases, 4 of dilatation and 5 of dilatation with torsion.

This particular case is recorded as it differs from those described by the authors above.

Clinical Description

The subject, a 5-year-old Friesian cow, was seen about 6 weeks after calving.

The history of the case was as follows. About 4 weeks before the animal was examined the herd broke into some very lush grass. This resulted in some reduction in milk yield and some loss of appetite. In a few cows (including the subject) there was a mild degree of bloat. In a few days the health of the herd returned to normal with the exception of this one cow. Her milk yield, which had been 6 gallons, returned to only 4½ gallons daily and her appetite remained poor.

The following symptoms were found on examination. Her temperature was 103° and the pulse rate 92 per minute. There were strong ruminal movements, but these had probably been exaggerated by previous treatment, which included drenching with a powder containing ammonium bicarbonate, prepared nux vomica and gentian, and with tablets containing barium chloride. There was a mild diarrhoea, which was foul smelling, but appeared normal in quantity.

On rectal examination, the abomasum, the wall of which was very thickened, was found extending back to the pelvis and completely filling the right side of the abdomen. The abomasum was so large that it was only with difficulty that a hand could be inserted between it and the rumen, which it had displaced to some extent ventrally.

At this stage there was little doubt that this was a case of abomasal dilatation. This diagnosis was confirmed on finding the splashing sounds on ballottement of the right ventral abdominal wall and on hearing the high pitched fluid sounds on auscultation, as described by Neal and Pinsent. In this case, however, the fluid sounds were not as loud as those heard in displacement of the abomasum, and there was no distension of the right flank, as described by Neal and Pinsent in their cases.

Examination of the cow walking showed the stilted gait and slow movements associated with cases of peritonitis in cattle.

Treatment

On the following day a right flank laparotomy under paravertebral anaesthesia was performed.

On incising the muscle layers it became obvious that there was an extensive adhesion between the abomasum and the parietal peritoneum of the abdomen. An attempt was made to find a way into the abdominal cavity without first entering the abomasum, but the abomasum filled such a large part of the abdomen that this was not possible. The abomasum was therefore drained by continuing the incision into it, it being impossible for the abomasal contents to get into the abdominal cavity because of the adhesion. About 1½ gallons of a cloudy straw-coloured fluid was forced out under considerable pressure.

It was then possible to break down the adhesion and explore the abdomen. It was found that the abomasum was firmly attached to almost the whole of the right abdominal wall. On finding this it was decided that the only course was to close the laparotomy wound and to send the animal for immediate slaughter.

Post-mortem Findings

A complete *post-mortem* examination was not possible, the only material available being the carcase and the abomasum.

The visceral peritoneum of the abomasum was covered by a layer of fibrinous exudate, in which part of the duodenum was buried. The abomasal wall, which was about 1½ inches thick, showed a marked inflammatory oedema. Its mucous membrane showed some ulceration.

The parietal peritoneum of the right abdominal wall showed many tags of fibrin.

From the description given by the meat inspector who saw the abomasum removed from the carcase it seems probable that there was some degree of clockwise torsion.

(*Concluded at foot of col.* 1, *page* 439).

A Case of Urinary Bladder Prolapse in the Cow.—*Concluded.*

during the operation, epidural anaesthesia was not found to be necessary. Copious micturition occurred after replacement. A streptomycin pessary was inserted into the dilated urethra and the animal appeared to be much more comfortable.

Prognosis. The prognosis was good.

Post-operative Progress. The cow made an uneventful recovery.

Discussion. This case is reported since, in the writer's experience, the condition is not common.

Surgical Correction in a Case of Dilatation and Torsion of the Bovine Abomasum

BY

W. A. HALHEAD
Malmesbury

Subject. A 7-year-old Ayrshire cow.

History. The animal had calved 3 days previously. She had not eaten since she calved and her appetite had begun to decline 2 or 3 days before calving. There had been signs of acute abdominal pain and at one stage the animal had collapsed in the yard. Since calving she had never given more than half a gallon of milk and when examined there was almost complete agalactia. During the last 24 hours faeces had been passed infrequently and in very small amounts. This animal had a previous history of inappetence and vague digestive disturbance following her last calving.

Symptoms. The general bodily condition and appearance of the animal was good. The stance gave evidence of acute abdominal pain; the back was depressed and she was standing with her hind legs stretched back in the dung channel. The respiratory rate was increased, the pulse was 90 per minute and the temperature 101° F. There was slight distension of the right flank which gave a resonant sound on percussion. On examination, there was a small amount of dark, foul smelling diarrhoeic material present in the rectum. In the right anterior dorsal abdomen a tense fluid-filled sac could be palpated, the convexity of which was almost in contact with the dorsal abdominal wall.

Diagnosis. Dilatation with probable torsion of the abomasum.

Treatment. The animal had made a spontaneous recovery following similar symptoms after her previous calving and as her general condition was fairly good it was decided to leave her for 12 hours in the hope that improvement would again occur without recourse to surgical interference. However, when she was examined the following day her condition had deteriorated. No faeces had been passed since the first examination and the distension of the right flank was now very obvious. On auscultation " fluid and gas " sounds could be heard and on percussion there was resonance over the whole of the right flank; there was no area of hepatic dullness. Immediate surgery was advised and a very poor prognosis given. The animal was admitted to the surgery about 2 hours later. In the intervening period her condition had deterioriated rapidly.

Operative procedure. The operation was performed in the standing position under paravertebral anaesthesia, and the right flank approach was used.

When the abdominal wall had been incised the abomasum could be seen filling the incision. It was grossly distended and almost filled the abdominal cavity on the right-hand side. The long axis of the abomasum was vertical and the pylorus was nearly in contact with the liver which was displaced medially. The gall bladder was enormously distended. Tight bands of mesentery could be felt around the abomasal-omasal junction and the anterior abomasum. The disposition of the dilated organ conformed exactly to that described by Neal and Pinsent as clockwise torsion.

A purse-string suture was placed in the lateral wall of the abomasum and a rubber drainage tube was inserted. The fluid contents were then drained and the gas, which was present in the dorsal part of the organ, was allowed to escape through a large bore needle which was inserted about 5 inches above the drainage tube. As the fluid and gas were removed muscular tone returned to the abomasal wall. Drainage took about half an hour and even then all the contents were not removed as it was found that as the pressure in the organ was reduced it became increasingly difficult to maintain the flow through the drainage tube. After removal of the tube the purse-string suture was tied and oversewn with interrupted Lembert sutures.

Reposition of the displaced viscus was then attempted by traction on the pylorus in a caudal direction while the fundus was pushed forward and down. It was found impossible to effect any change in the position of the parts using a degree of force

(*Continued at foot of page overleaf*)

Dilatation of the Abomasum in a Cow.—*Concluded.*

Discussion

Neal and Pinsent suggest that the term " torsion " should be confined to that condition where maximum rotation has resulted in strangulation of the abomasal blood supply and rupture of the omentum. These cases show severe symptoms, death occurring in a day or two, and the abomasum is so large that it extends back to the pelvis.

They use the term " dilatation " to describe simple distension of the abomasum, but suggest that in many of these cases some degree of rotation is present. The symptoms shown are mild, spontaneous recovery can occur, and the abomasum is much smaller than in cases of true torsion.

Accepting this definition of the terms " torsion " and " dilatation " the case described here does not fit either exactly.

The great size of the abomasum, and the extent of the peritonitis (which was a very obvious feature on clinical examination) suggest true torsion. However, the mild symptoms shown suggest simple dilatation.

It seems probable that the degree of rotation required to produce true torsion is critical. In this case the gradual formation of an adhesion between the abomasum and the abdominal wall just prevented this degree being reached, and thus strangulation of the abomasal blood supply did not occur.

References

NEAL, P. A., & PINSENT, P. J. N. (1960). *Vet. Rec.* **72**. 175.
RICHARDSON, R. (1958). *Ibid.* **68**. 496.

Current Literature

BOOK REVIEWS

The Veterinary Annual. Edited by W. A. POOL. John Wright, Bristol (1961). 42s.

The first issue of the "Veterinary Annual" was reviewed in THE VETERINARY RECORD (Vol. 72, p. 185). The second issue has just appeared. Its format and general layout had been established from the beginning, so the second issue, is, in general, closely according to pattern,

There are 8 special articles, each on a topical subject of wide interest: Veterinary Medicine in the U.S.A. (J. F. Smithcors); Veterinary Affairs in British Colonial Territories (R. S. Marshall); Control of Infectious Diseases of Poultry in the Netherlands (Jac Jansen); The Veterinary Profession in France (A. J. Brion); Brucella's Challenge (Dalrymple-Champneys); The Poultry Industry in Great Britain (R. Coles); Welfare Services for Animals in Britain and Some Other Countries (P. Croft); The Child, The Pony, and the Veterinary Surgeon (D. Davenport).

The review part of the book, the main one, is divided into 16 major headings on the same lines as in the 1959 issue. With a new review organ of the type of this book the detailed cover of the literature naturally requires steady and careful evolution and the range is being improved each year. For example, while there were comprehensive articles on anthelmintics, parasiticides, the therapy of protozoan infections, and anaesthesia, there was none on general drug therapy. This year the subject is dealt with most interestingly by M. Keen; in his, and also in Beesley's, article on insecticides and acaricides there are tables giving the official and proprietary names of the numerous drugs mentioned and also their approved names in the U.S.A.

As before there are lists of new drugs and appliances, with details supplied by the makers, also of new books. The index is most comprehensively cross-referenced, so that a busy user may easily find what he requires.

The publishers have produced a pleasing and convenient book for the busy man.

It is understood that the next issue which is already well on its way will have certain additions to the range of subjects dealt with.

Glands of Internal Secretion in the Embryonic Development of Birds and Mammals. By M. S. MITSKEVICH. The Academy of Sciences of the U.S.S.R., Moscow (1957). Translation from the Program for Scientific Translations, 14 Shammai Street, P.O. Box 7145, Jerusalem, Israel.

Surgical Correction in a Case of Dilatation and Torsion of the Bovine Abomasum.—*Concluded.*

which would not cause serious trauma to the peritoneum. The drainage of the organ had not been complete and it was felt at this stage that if the organ was completely empty it would increase the chances of successful correction. Stay sutures were placed in the abomasal wall which was then drawn out through the abdominal wall incision, the lower commissure of which was packed with towels. An incision of sufficient length to admit the hand and arm was made between the stay sutures. The remaining contents were then removed through the abomasatomy incision. A large quantity of sand and food particles which were impacted in the fundus was removed in this way, together with the fluid which remained. During this procedure it was found possible to pass the hand into the omasum, and with the hand in this position the omasum could be moved in an anterior posterior direction. The omasum was moved backwards and forwards and then forwards and upwards as far as possible. Following this manipulation the tight bands of mesentery which had previously been felt around the anterior abomasum could no longer be palpated, although the position of the abomasum had not changed. The abomasal incision was then closed with a double row of continuous Lembert sutures. It was now found that by using gentle pressure the abomasum could be returned to approximately its normal position. The abdominal wall was then closed in the usual way.

Procaine penicillin, 3 mega units, and dihydrostreptomycin, 3 grammes, were given intramuscularly daily for 3 days post-operatively.

Course of recovery. The animal started to eat 12 hours after the operation was completed and faeces were passed on the second day. The faeces at first were very fluid, but over a period of about 5 days they gradually returned to a normal consistency. The animal was discharged from the surgery 4 days after operation. The skin sutures were removed on the tenth day. The condition of the animal at this time was fairly good. Roughage was eaten normally but concentrates were only taken slowly. The faeces were normal in amount and consistency. She was giving about 1½ gallons of milk a day. There was still no area of hepatic dullness on percussion of the right side and ruminal tympany tended to occur after concentrates had been fed.

The animal was examined again 10 days later when her condition and demeanour showed a great improvement. Appetite and defaecation were normal and the milk yield had risen to 2 gallons a day. There was no ruminal tympany and percussion of the right flank revealed a normal pattern. This animal has been examined again several times and has remained in good health.

Acknowledgment.—I would like to thank Mr. T. A. Mason, B.V.SC., for assistance during the operation.

Reference

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This book is a valuable source of information about Russian work in the large field surveyed. Chapter I is largely introductory, containing an interesting discussion of the inter-relationships of the neural and hormonal systems of control of body function, and of their evolution. Chapter II reviews existing information regarding the functions of the embryonic thyroid, pituitary, adrenal pancreatic, parathyroid, and sex, glands. Chapters III to VI include records of original work on the histogenesis and physiology of the thyroid, pituitary, and pancreatic, glands of several laboratory species and of sheep. The functional relationships of hypophysis and thyroid gland are examined and detailed reference is made to original experiments involving the treatment with thiouracil of rat, rabbit, guinea-pig, and sheep, embryos. The neural regulation of the embryonic endocrine glands is examined in Chapter VII. Chapter VIII deals briefly with the hormones in embryonic development in birds. The final chapter is a review of foetal-maternal relationships and deals with neuro-humoral connections between mother and foetus and with the physiology and endocrinology of the placenta.

There is a list of more than 500 references of which some 200 are to Russian work. The book is bound between soft covers and the printing and paper are unattractive but quite adequate.

An Introduction to the Biology of Micro-organisms. By LILIAN E. HAWKER, A. H. LINTON, B. F. FOLKES, and M. J. CARLILE. Edward Arnold, London (1960). 35s.

Many books and university courses on microbiology deal mainly with the bacteria but the book under review gives due space to the fungi, protozoa, algae, and viruses, as well as to the bacteria. There are 4 authors, 1 a mycologist, 1 a lecturer in veterinary bacteriology, and 2, lecturers in botany. The stated object of the book is to give a general introduction to the morphology, physiology, and ecology, of the major groups of micro-organisms. It is divided into 3 sections, 1 on morphology and life cycles, 1 on physiology and metabolism, and 1 on ecology.

The section on physiology and metabolism contains 6 chapters : chemistry ; metabolism ; nutrition ; growth, phase changes, and survival ; dormancy ; senescence and death. The last section is particularly well done and goes into the subject in more detail than most veterinary textbooks.

The section on ecology deals in 6 chapters with micro-organisms of soil, air and water, plants, animals, food, and industrial fermentations ; it will be of va!ue to readers with a wide range of interests.

There is a useful appendix of some 20 pages on techniques. There are no references in the text but each chapter has a list of books, reviews, and important articles, which have been well chosen. The paper and binding are pleasing and there are numerous plates and text figures. A few minor errors caught the eye and might be corrected in future editions ; for example, it is stated (p.139) that rinderpest " attacks only ruminants," whereas it can and does cause natural disease in pigs and can, experimentally, be adapted to the rabbit. Again, on p.354, discussing the production of virus vaccines by passaging virus through unusual hosts, the examples given might be brought more up-to-date. The egg-passaged rabies vaccine is probably today more widely used than the rabbit-passaged vaccine, while the rinderpest vaccines produced by passage through the goat or the rabbit are much more widely used than that produced by egg-passage.

While this book is not for the veterinary student interested solely in passing his examinations, it can be recommended to veterinarians who wish to broaden their field of knowledge.

Die Narkose der Tiere. Band I—Lokalänasthesie. Veterinary Anaesthesia. Part I—Local Anaesthesia. By M. WESTHUES & R. FRITSCH. Paul Parey, Berlin. (1960). 25·80 DM.

This is a most comprehensive treatise on veterinary local anaesthesia. The first part of the book covers the basic principles involved, its advantages, indications, and contra-indications. The various anaesthetic preparations used in Germany are discussed together with the agents which may be incorporated to localise and accentuate their action and those which facilitate anaesthetic spread. There is also a chapter on syringes and needles and techniques of injection. The greater part of the book is concerned with the techniques of surface, infiltration, and regional, anaesthesia. Successive chapters deal with the anaesthesia of joints and tendon sheaths ; nerve blocks and regional anaesthesia of the head and limbs ; paravertebral and spinal anaesthesia in all species. The latter embraces both epidural, subdural, and segmental, techniques and is discussed at some length.

Paravertebral anaesthesia is divided into proximal or distal depending upon whether the nerve trunks are blocked at their points of emergence from the intervertebral foraminae or from their terminal branches lower down the abdominal wall. The text covers proximal and distal paravertebral nerve block in the dog and distal in the horse.

The final chapters make suggestions for the types of anaesthesia which would be appropriate for certain operations, for example rumenotomy, castration, and certain operational zones and organs, such as the perineum, penis, vulva, udder, and teats. Blocking of the stellate ganglion of the lumbar sympathetic nerves in the horse and dog is also included.

The book is profusely illustrated with photographs, line, and half tone, drawings. Whilst throughout the book there are anatomical introductions to the procedures outlined, one feels that little attention was given to anatomical accuracy in many of the illustrations. One gets the impression that the subject has been somewhat overstressed. Many veterinarians in this country would no doubt feel that a number of the techniques described in this book are too difficult or hazardous and are outmoded in favour of general anaesthesia. Nevertheless, the authors are to be congratulated on a book which will commend itself to those interested in

(*Concluded at foot of col.* 1 *overleaf*)

Divisional News

NORTH WALES DIVISION

The Annual General Meeting was held at the Royal Hotel, Llangollen, on Friday, November 25th, 1960, at 2 p.m. The President, Mr. R. S. Roberts, occupied the Chair.

Twenty-one members and 2 visitors were present. Apologies for non-attendance were received from 4 members.

In his opening remarks the President welcomed back to Wales Mr. Duff as the new R.V.O.

The members stood in silence in memory of Mr. H. E. Prytherch, who died on November 15th.

Minutes

The minutes of the previous meeting, held on Wednesday, September 21st, were read and signed.

Matters Arising

The President reported on the results of investigations of accommodation available for the 1963 B.V.A. Congress at Llandudno. After discussion, it was unanimously agreed to invite the B.V.A. Annual Congress to come to Llandudno during the third week of September, 1963.

Correspondence

A letter dated November 25th, 1960, from the General Secretary, B.V.A., concerning the adoption of the Cheshire Crystal Violet Swine Fever Vaccination Scheme, was read. It was agreed that no action be taken by the Division but individuals who were interested should apply direct to B.V.A. headquarters for further particulars.

Council Report for the Year 1959-60

The report was read and accepted. It was agreed to invest a further £100 in 5 per cent. Defence Bonds.

Nomination of Officers

Officers and Council elected for the year 1960/61 were as follows: President: Mr. R. W. Pritchard; Senior Vice-President: Mr. R. S. Roberts; Junior Vice-President: Mr. J. E. Tudor; Honorary Treasurer: Mr. C. W. Cartwright; Honorary Secretary: Mr. C. M. Edwards; and Public Relations Officer and Assistant Honorary Secretary: Mr. D. M. Thomson.

Council: Mr. Ceiriog Jones, Mr. J. N. Bowen and Mr. J. M. Fraser

Representation on Welsh Branch

The President, the Junior Vice-President, and Mr. Duff were nominated.

Presidential Address

The President, Mr. R. S. Roberts, related his experiences during his recent visit to Persia on behalf of the Foreign Office. With his permission, an interesting discussion followed.

Installation of President

Mr. R. W. Pritchard was installed as the new President.

Reports from Sub-Committees

Reports were received from sub-committees and the representatives re-elected *en bloc*.

Membership

Mr. J. R. S. Elmslie, of Aberystwyth, was elected a full member of the Division, and Messrs G. Llewelyn, Gareth Jones, M. H. Townley, and Peter Fitchie, were nominated for election.

Letters of resignation were received from Mr. A. G. Beynon and Mr. J. E. Morris, on leaving Wales, and from Mr. R. L. Lewis on his retirement. The resignation of Messrs. Beynon and Morris was accepted with regret. It was agreed to refer Mr. Lewis's letter to Council for further deliberation.

Next Meeting

The date was to be considered by Council. It would be a Wednesday in mid March. The venue would be Bettws-y-Coed, and the subject of the discussion would be either a clinical session or poultry. The President expressed his wish to have a meeting of the Division in Denbigh during the year. A joint meeting with the Lancashire Division would also be due for consideration.

Any Other Matter

It was agreed to write to Mr. D. T. Roberts, who was undergoing an operation at Guy's Hospital, wishing him well on behalf of the Division.

Book Reviews.—*Concluded.*

veterinary anaesthesia and augurs well for the publication of the next volume. The bibliography is exhaustive and the presentation is up to the usual high standard which the publishers have set themselves.

CORRECTION

With regard to the summary of the Annual Report of the Secretary to the Federal Ministry of Agriculture, Southern Rhodesia, we are asked to say that the Department of Veterinary Services does not, and has never, carried out vaccinations against foot-and-mouth disease.

The procedure adopted is to cordon off the infected area and inoculate all cattle within this area with a 1 in 600 dilution of field virus. This prevents the disease from simmering and ensures that all in-contact cattle are given the disease at the same time. By this procedure, we are informed, an outbreak is speedily eliminated.

A REQUEST FROM GERMANY

A German veterinary surgeon, Dr. Georg Hell, would like to come to England and join a practice in order to learn the language, and also see something of British methods of work. Any of our readers who would like to have Dr. Hell's assistance are asked to write to the Editor of THE VETERINARY RECORD who will forward letters.

First International Congress on Small-animal Practice

From a Correspondent

"An occasion which will live in our memory for the rest of our professional lives." With these words at the dinner on the Saturday night, Dr. W. G. Magrane, of the American Animal Hospital Association, summarised the feelings of everyone who attended this most successful B.S.A.V.A. Congress. Dr. Magrane was among the 12 overseas speakers who addressed the Congress on matters relating to small-animal medicine and surgery. The quality of the presentations was extremely high, and it would be fair to say that Dr. Magrane's contributions on the eye both in his paper and in the closed circuit colour television programme, made a tremendous impact on the delegates. The canine eye received a great deal of attention during the 4 days of the meeting, in the Kensington Palace Hotel, London. Its examination was dealt with by a team under Mr. F. G. Startup on the Thursday; a corneal graft was illustrated by an outstanding film shown by Professor Cella of Bologna; surgical procedures were discussed by Dr. Magrane during Saturday afternoon's television programme, and glaucoma, again by Dr. Magrane in a paper on the Sunday afternoon.

However, orthopaedic conditions and surgery also claimed a great deal of the delegates' time, particularly during the historic occasion on the Thursday evening when just under 400 veterinary surgeons from Europe joined over 1,000 veterinary surgeons in St. Louis, U.S.A., to hear 4 leading experts from both sides of the Atlantic discuss hip dysplasia and Perthe's disease.

The organisation of this occasion reflected the greatest credit upon a team from Smith Kline & French Laboratories who, in addition to providing this unique facility, were also responsible for the extremely successful presentation of two afternoons of closed circuit colour television.

On the Thursday evening the transatlantic link was preceded by a meeting of the World Small Animal Veterinary Association (this was the new title adopted). Dr. Magrane, deputising for the President, Dr. Wayne H. Riser, took the chair and a committee representing many European national small-animal associations was elected. The organisation of this new Association will be under the supervision of the secretary, Mr. Singleton, and the committee will

Mr. Sydney Jennings, President of the B.V.A., proposing the vote of thanks to Lord Rank. The photograph shows, left to right Mr. J. S. J. Lauder, Mr. S. F. J. Hodgman, Lord Rank, Mr. W. Brian Singleton, Mr. Sydney Jennings, Mr. A. Steele-Bodger, and Mr. G. N. Henderson.

assist in the planning of the small-animal papers at the World Veterinary Association Congress at Hanover in 1963.

As an experiment the B.S.A.V.A. had provided an additional day of activity on the Thursday, when clinical cases were discussed in the morning and demonstrations given in the afternoon. Attendance for the Thursday far exceeded the expectations of the committee and the interest and enthusiasm for these sessions justifies their consideration for future years.

Probably the most dramatic moment during the television programmes was in the operation of Caesarean section performed under sedative and local anaesthesia only. The second of the 5 puppies delivered proved difficult and the operator, Mr. N. H. Turnbull, had 400 viewers anxiously "assisting" him until the crisis was passed. This moment brought home the great advantage of television over film, the former's immediacy allows the viewer to share all the difficulties which are usually cut out of a film.

The paper on canine dermatology, by Dr. R. H. Schwartzman of Philadelphia, was also received by a packed hall. The masterly review of this subject was a tribute not only to the extensive knowledge of the author, but to the obvious care and effort which had gone into the preparation of the paper. This was a feature of all the papers and demonstrations at the Congress.

The contributions from Sweden by Professor Obel and Professor Olssen, were extremely well received and indicated the interest shown by that country in research in small-animal subjects. Perhaps this is a hint to some of our research workers in Great Britain that the dog and cat are worthy of a little more attention.

Dr. McIntyre, Glasgow, in his paper on nephritis, Dr. Meynard, Bordeaux, speaking on ear cleansing, and Dr. Baker, Cornell, dealing with canine viral diseases, gave excellent reviews of these subjects and presented facts of immediate practical value to every practitioner present.

It is difficult to write a review of the Congress without mentioning every contributor, and if some reader believes that the most interesting paper presented has been omitted this is only an example of the wide appeal of the scientific programme.

Simultaneous translation was available throughout the Congress and the receivers were in constant use by all delegates including nearly 70 visitors from Europe. This made possible clear reproduction of the speakers' voices in all 3 languages in the main Congress room and in the overflow room.

The social functions were no less enjoyable, the highlight being the dinner and dance. Sir John Ritchie, proposing the toast to the Association, spoke of the rapid growth of the B.S.A.V.A. in the few short years of its life and the great value of its keen enthusiasm and vigour to the life of the profession.

Although the Congress ended officially in the early evening of Sunday, some of the foreign visitors joined the special trip to the Cambridge Veterinary School on the Monday. They were very graciously received and indicated how impressed they were with the School and their interest in all they had seen and heard.

This report would be incomplete without reference to the general pleasure at the presence of Lord Rank who performed the official opening ceremony on the Friday morning. After opening the Congress he spent some time in the Trade Exhibition, visiting some of the 32 stands and talking to the trade representatives. This was as it should be, since it was only through the generosity of the trade that this Congress was possible. Many companies donated money to the organisers to ensure the outstanding success of this historic first international congress on small-animal veterinary practice.

At the Annual General Meeting of the B.S.A.V.A. on Sunday the following appointments were made for the coming year:—

President: A. Steele-Bodger; *Senior Vice-President*: W. Brian Singleton; *Junior Vice-President*: O. Graham-Jones; *Hon. Secretary*: G. N. Henderson, and *Hon. Treasurer*: J. S. J. Lander.

B.S.A.V.A. representatives on B.V.A. Council, effective from September, 1961:—

W. H. Carr, K. G. D. Evans, G. N. Henderson, E. M. Pittaway, C. E. Woodrow, and M. Young.

DEPARTMENT OF TECHNICAL CO-OPERATION BILL

This Bill was read a second time in the House of Commons last week, and was sent forward to a Committee of the House. So far as our own profession is concerned the Bill has as its object to create a new Government Department to be called the Department of Technical Co-operation, and this will deal with the provision of aid to overseas countries through the supply of professional and other highly skilled personnel. In introducing the Bill the Financial Secretary to the Treasury gave examples of the 36 different categories of experts included veterinary surgeons, and he went on to speak of the value of such services: "under the heading of social services the provision of veterinary services would most certainly be included."

If the Bill becomes law it is hoped to set up the new Government Department before the summer recess.

THE ASSOCIATION OF STATE VETERINARY OFFICERS

The annual dinner of the Association was held at the Criterion Restaurant, Piccadilly, on April 29th.

The President, Mr. R. M. Loosmore, welcomed the guests, who included Mr. Sidney Jennings, President of the B.V.A.; Sir John Ritchie, C.B., Chief Veterinary Officer; Sir John Winnifrith, K.C.B., Permanent Secretary to the Ministry of Agriculture, Fisheries and Food; Mr. C. P. Quick, Assistant Secretary, Animal Health Division; Dr. A. W. Stableforth; Mr. John Anderson, General Secretary of the B.V.A.; and Mr. Stanley Mayne. 120 members and their guests spent a very happy evening.

The R.C.V.S. Council Meeting

THE quarterly meeting of the Royal College Council was held in Kensington Town Hall on March 24th. The President, Sir John Ritchie, C.B., was in the chair. The minutes of the meeting on January 6th having been approved and signed, and other formalities observed, the chairmen of standing committees presented their reports.

Reports of Committees

Library Committee

At the conclusion of the presentation of the report of the Library Committee by Professor E. G. White, Dr. R. E. Glover moved a vote of thanks to the Committee for the work done in moving the library from Red Lion Square to the new premises. It was a formidable task, and those who had seen the new library working were very well aware of the good work done by the Library Committee and the College librarian.

Parliamentary Committee

The report, which was presented by Professor W. L. Weipers, contained a number of points of interest. Following a meeting with representatives of the B.V.A. it was decided that the scheme for establishing certificated animal nursing auxiliaries should now be passed to the Examination and Education Committee with the request that it be implemented.

A meeting had been held with representatives of the P.D.S.A. during which were discussed certain proposals for the amendment of the Veterinary Surgeons' Act, 1948, which had been submitted to the Ministry of Agriculture. Referring to this item in Council Mr. J. M. Ingram asked whether it meant that there would be no further Licensees. The chairman replied that the proposal was that the clause which gave rise to that should be deleted from the legislation, and when the present Licensees were placed on the Supplementary Register, there would be no further Licensees. In point of fact, the point was included in the recommendations for alteration in the legislation which the Council had submitted to the Ministry of Agriculture. It was of interest because it showed that the P.D.S.A. were willing to fall in with the arrangements.

Sir Lawrence Watkinson drew attention to the P.D.S.A's request for speedy consideration to be given to the matter, and asked the Council to endorse that request. There was, he said, every advantage to be gained by pressing on with action in regard to Section 7. It would be for the benefit of the profession and the P.D.S.A.

Dr. R. F. Montgomerie said that members of the profession were not at all clear about the matter, and even if it were published, it was doubtful whether it would be widely read and properly understood. A debt of gratitude was owed to Sir Lawrence Watkinson and his colleagues who had carried the matter forward, and Dr. Montgomerie suggested that the time had arrived when a most satisfactory conclusion was presented if the necessary steps were taken to implement it. It seemed that the stage had been reached when some statement of the position should be made in THE VETERINARY RECORD. It would make the position clear to the profession, and would show that the Royal College had been very active to good effect.

Professor W. L. Weipers said that the Committee felt that the profession might not in fact be fully aware of this, and it was for that reason the Committee felt that the British Veterinary Association should be consulted more formally than in the past. That was the substance of the recommendation. Once that had been done, it would be perfectly in order to do that which Dr. Montgomerie had suggested.

At the close of this discussion it was agreed that if the consent of the P.D.S.A. were obtained, the matters discussed with the Royal College should be gone into with the B.V.A.

Referring to Item XIII (Cruelty to Animals Act, 1876), Dr. Glover said that he wholeheartedly supported the resolution, namely, "that whilst the Council approved of the suggestion for strengthening veterinary representation on the Advisory Council and the addition of veterinary surgeons as inspectors, it felt that no action should be taken which might in any way weaken the general provisions of the Act as at present enacted." He assumed that if it were adopted, it would remain as part of the Council's minutes; but he felt that the matter was of such importance and any change fraught with such danger that if any further steps were taken outside, it would be wise to empower the Officers to put forward the purport of the resolution to any outside body to whom they felt it might go. It might be necessary to move quickly in the matter and not refer back to Council.

Professor Buckley said that the Research Defence Society were well aware of what was happening with regard to the Act, and suggested that the Officers should be acquainted with the fact, because it might be very helpful in any negotiations which had to be carried out quickly.

The Council agreed that the Officers should be empowered to act in the matter as suggested.

In connection with the Jockey Club committee on the doping of racehorses it was reported that verbal evidence had been given on behalf of the College by the President, Mr. J. M. Ingram and the Registrar on January 20th, in which the attention of the committee was drawn to the following pronouncement of the College in the Guide to Professional Conduct: "Practitioners who advise the use of a drug for a racehorse or greyhound which might conceivably in any way affect its performances are under an obligation to discontinue the use of the drug at such a period prior to the race that the residue of the medicament has been eliminated.

"In connection with the prescribing of proprietary mixtures, it would, speaking broadly, appear to be

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Installation of President

Mr. R. W. Pritchard was installed as the new President.

Reports from Sub-Committees

Reports were received from sub-committees and the representatives re-elected *en bloc*.

Membership

Mr. J. R. S. Elmslie, of Aberystwyth, was elected a full member of the Division, and Messrs G. Llewelyn, Gareth Jones, M. H. Townley, and Peter Fitchie, were nominated for election.

Letters of resignation were received from Mr. A. G. Beynon and Mr. J. E. Morris, on leaving Wales, and from Mr. R. L. Lewis on his retirement. The resignation of Messrs. Beynon and Morris was accepted with regret. It was agreed to refer Mr. Lewis's letter to Council for further deliberation.

Next Meeting

The date was to be considered by Council. It would be a Wednesday in mid March. The venue would be Bettws-y-Coed, and the subject of the discussion would be either a clinical session or poultry. The President expressed his wish to have a meeting of the Division in Denbigh during the year. A joint meeting with the Lancashire Division would also be due for consideration.

Any Other Matter

It was agreed to write to Mr. D. T. Roberts, who was undergoing an operation at Guy's Hospital, wishing him well on behalf of the Division.

Book Reviews.—*Concluded.*

veterinary anaesthesia and augurs well for the publication of the next volume. The bibliography is exhaustive and the presentation is up to the usual high standard which the publishers have set themselves.

CORRECTION

With regard to the summary of the Annual Report of the Secretary to the Federal Ministry of Agriculture, Southern Rhodesia, we are asked to say that the Department of Veterinary Services does not, and has never, carried out vaccinations against foot-and-mouth disease.

The procedure adopted is to cordon off the infected area and inoculate all cattle within this area with a 1 in 600 dilution of field virus. This prevents the disease from simmering and ensures that all in-contact cattle are given the disease at the same time. By this procedure, we are informed, an outbreak is speedily eliminated.

A REQUEST FROM GERMANY

A German veterinary surgeon, Dr. Georg Hell, would like to come to England and join a practice in order to learn the language, and also see something of British methods of work. Any of our readers who would like to have Dr. Hell's assistance are asked to write to the Editor of THE VETERINARY RECORD who will forward letters.

First International Congress on Small-animal Practice

From a Correspondent

"An occasion which will live in our memory for the rest of our professional lives." With these words at the dinner on the Saturday night, Dr. W. G. Magrane, of the American Animal Hospital Association, summarised the feelings of everyone who attended this most successful B.S.A.V.A. Congress. Dr. Magrane was among the 12 overseas speakers who addressed the Congress on matters relating to small-animal medicine and surgery. The quality of the presentations was extremely high, and it would be fair to say that Dr. Magrane's contributions on the eye both in his paper and in the closed circuit colour television programme, made a tremendous impact on the delegates. The canine eye received a great deal of attention during the 4 days of the meeting, in the Kensington Palace Hotel, London. Its examination was dealt with by a team under Mr. F. G. Startup on the Thursday; a corneal graft was illustrated by an outstanding film shown by Professor Cella of Bologna; surgical procedures were discussed by Dr. Magrane during Saturday afternoon's television programme, and glaucoma, again by Dr. Magrane in a paper on the Sunday afternoon.

However, orthopaedic conditions and surgery also claimed a great deal of the delegates' time, particularly during the historic occasion on the Thursday evening when just under 400 veterinary surgeons from Europe joined over 1,000 veterinary surgeons in St. Louis, U.S.A., to hear 4 leading experts from both sides of the Atlantic discuss hip dysplasia and Perthe's disease.

The organisation of this occasion reflected the greatest credit upon a team from Smith Kline & French Laboratories who, in addition to providing this unique facility, were also responsible for the extremely successful presentation of two afternoons of closed circuit colour television.

On the Thursday evening the transatlantic link was preceded by a meeting of the World Small Animal Veterinary Association (this was the new title adopted). Dr. Magrane, deputising for the President, Dr. Wayne H. Riser, took the chair and a committee representing many European national small-animal associations was elected. The organisation of this new Association will be under the supervision of the secretary, Mr. Singleton, and the committee will

Mr. Sydney Jennings, President of the B.V.A., proposing the vote of thanks to Lord Rank. The photograph shows, left to right Mr. J. S. J. Lauder, Mr. S. F. J. Hodgman, Lord Rank, Mr. W. Brian Singleton, Mr. Sydney Jennings, Mr. A. Steele-Bodger, and Mr. G. N. Henderson.

assist in the planning of the small-animal papers at the World Veterinary Association Congress at Hanover in 1963.

As an experiment the B.S.A.V.A. had provided an additional day of activity on the Thursday, when clinical cases were discussed in the morning and demonstrations given in the afternoon. Attendance for the Thursday far exceeded the expectations of the committee and the interest and enthusiasm for these sessions justifies their consideration for future years.

Probably the most dramatic moment during the television programmes was in the operation of Caesarean section performed under sedative and local anaesthesia only. The second of the 5 puppies delivered proved difficult and the operator, Mr. N. H. Turnbull, had 400 viewers anxiously "assisting" him until the crisis was passed. This moment brought home the great advantage of television over film, the former's immediacy allows the viewer to share all the difficulties which are usually cut out of a film.

The paper on canine dermatology, by Dr. R. H. Schwartzman of Philadelphia, was also received by a packed hall. The masterly review of this subject was a tribute not only to the extensive knowledge of the author, but to the obvious care and effort which had gone into the preparation of the paper. This was a feature of all the papers and demonstrations at the Congress.

The contributions from Sweden by Professor Obel and Professor Olssen, were extremely well received and indicated the interest shown by that country in research in small-animal subjects. Perhaps this is a hint to some of our research workers in Great Britain that the dog and cat are worthy of a little more attention.

Dr. McIntyre, Glasgow, in his paper on nephritis, Dr. Meynard, Bordeaux, speaking on ear cleansing, and Dr. Baker, Cornell, dealing with canine viral diseases, gave excellent reviews of these subjects and presented facts of immediate practical value to every practitioner present.

It is difficult to write a review of the Congress without mentioning every contributor, and if some reader believes that the most interesting paper presented has been omitted this is only an example of the wide appeal of the scientific programme.

Simultaneous translation was available throughout the Congress and the receivers were in constant use by all delegates including nearly 70 visitors from Europe. This made possible clear reproduction of the speakers' voices in all 3 languages in the main Congress room and in the overflow room.

The social functions were no less enjoyable, the highlight being the dinner and dance. Sir John Ritchie, proposing the toast to the Association, spoke of the rapid growth of the B.S.A.V.A. in the few short years of its life and the great value of its keen enthusiasm and vigour to the life of the profession.

Although the Congress ended officially in the early evening of Sunday, some of the foreign visitors joined the special trip to the Cambridge Veterinary School on the Monday. They were very graciously received and indicated how impressed they were with the School and their interest in all they had seen and heard.

This report would be incomplete without reference to the general pleasure at the presence of Lord Rank who performed the official opening ceremony on the Friday morning. After opening the Congress he spent some time in the Trade Exhibition, visiting some of the 32 stands and talking to the trade representatives. This was as it should be, since it was only through the generosity of the trade that this Congress was possible. Many companies donated money to the organisers to ensure the outstanding success of this historic first international congress on small-animal veterinary practice.

At the Annual General Meeting of the B.S.A.V.A. on Sunday the following appointments were made for the coming year:—

President: A. Steele-Bodger; *Senior Vice-President*: W. Brian Singleton; *Junior Vice-President*: O. Graham-Jones; *Hon. Secretary*: G. N. Henderson, and *Hon. Treasurer*: J. S. J. Lander.

B.S.A.V.A. representatives on B.V.A. Council, effective from September, 1961:—

W. H. Carr, K. G. D. Evans, G. N. Henderson, E. M. Pittaway, C. E. Woodrow, and M. Young.

DEPARTMENT OF TECHNICAL CO-OPERATION BILL

This Bill was read a second time in the House of Commons last week, and was sent forward to a Committee of the House. So far as our own profession is concerned the Bill has as its object to create a new Government Department to be called the Department of Technical Co-operation, and this will deal with the provision of aid to overseas countries through the supply of professional and other highly skilled personnel. In introducing the Bill the Financial Secretary to the Treasury gave examples of the 36 different categories of experts included veterinary surgeons, and he went on to speak of the value of such services: "under the heading of social services the provision of veterinary services would most certainly be included."

If the Bill becomes law it is hoped to set up the new Government Department before the summer recess.

THE ASSOCIATION OF STATE VETERINARY OFFICERS

The annual dinner of the Association was held at the Criterion Restaurant, Piccadilly, on April 29th.

The President, Mr. R. M. Loosmore, welcomed the guests, who included Mr. Sidney Jennings, President of the B.V.A.; Sir John Ritchie, C.B., Chief Veterinary Officer; Sir John Winnifrith, K.C.B., Permanent Secretary to the Ministry of Agriculture, Fisheries and Food; Mr. C. P. Quick, Assistant Secretary, Animal Health Division; Dr. A. W. Stableforth; Mr. John Anderson, General Secretary of the B.V.A.; and Mr. Stanley Mayne. 120 members and their guests spent a very happy evening.

The R.C.V.S. Council Meeting

THE quarterly meeting of the Royal College Council was held in Kensington Town Hall on March 24th. The President, Sir John Ritchie, C.B., was in the chair. The minutes of the meeting on January 6th having been approved and signed, and other formalities observed, the chairmen of standing committees presented their reports.

Reports of Committees

Library Committee

At the conclusion of the presentation of the report of the Library Committee by Professor E. G. White, Dr. R. E. Glover moved a vote of thanks to the Committee for the work done in moving the library from Red Lion Square to the new premises. It was a formidable task, and those who had seen the new library working were very well aware of the good work done by the Library Committee and the College librarian.

Parliamentary Committee

The report, which was presented by Professor W. L. Weipers, contained a number of points of interest. Following a meeting with representatives of the B.V.A. it was decided that the scheme for establishing certificated animal nursing auxiliaries should now be passed to the Examination and Education Committee with the request that it be implemented.

A meeting had been held with representatives of the P.D.S.A. during which were discussed certain proposals for the amendment of the Veterinary Surgeons' Act, 1948, which had been submitted to the Ministry of Agriculture. Referring to this item in Council Mr. J. M. Ingram asked whether it meant that there would be no further Licensees. The chairman replied that the proposal was that the clause which gave rise to that should be deleted from the legislation, and when the present Licensees were placed on the Supplementary Register, there would be no further Licensees. In point of fact, the point was included in the recommendations for alteration in the legislation which the Council had submitted to the Ministry of Agriculture. It was of interest because it showed that the P.D.S.A. were willing to fall in with the arrangements.

Sir Lawrence Watkinson drew attention to the P.D.S.A's request for speedy consideration to be given to the matter, and asked the Council to endorse that request. There was, he said, every advantage to be gained by pressing on with action in regard to Section 7. It would be for the benefit of the profession and the P.D.S.A.

Dr. R. F. Montgomerie said that members of the profession were not at all clear about the matter, and even if it were published, it was doubtful whether it would be widely read and properly understood. A debt of gratitude was owed to Sir Lawrence Watkinson and his colleagues who had carried the matter forward, and Dr. Montgomerie suggested that the time had arrived when a most satisfactory conclusion was presented if the necessary steps were taken to implement it. It seemed that the stage had been reached when some statement of the position should be made in THE VETERINARY RECORD. It would make the position clear to the profession, and would show that the Royal College had been very active to good effect.

Professor W. L. Weipers said that the Committee felt that the profession might not in fact be fully aware of this, and it was for that reason the Committee felt that the British Veterinary Association should be consulted more formally than in the past. That was the substance of the recommendation. Once that had been done, it would be perfectly in order to do that which Dr. Montgomerie had suggested.

At the close of this discussion it was agreed that if the consent of the P.D.S.A. were obtained, the matters discussed with the Royal College should be gone into with the B.V.A.

Referring to Item XIII (Cruelty to Animals Act, 1876), Dr. Glover said that he wholeheartedly supported the resolution, namely, "that whilst the Council approved of the suggestion for strengthening veterinary representation on the Advisory Council and the addition of veterinary surgeons as inspectors, it felt that no action should be taken which might in any way weaken the general provisions of the Act as at present enacted." He assumed that if it were adopted, it would remain as part of the Council's minutes; but he felt that the matter was of such importance and any change fraught with such danger that if any further steps were taken outside, it would be wise to empower the Officers to put forward the purport of the resolution to any outside body to whom they felt it might go. It might be necessary to move quickly in the matter and not refer back to Council.

Professor Buckley said that the Research Defence Society were well aware of what was happening with regard to the Act, and suggested that the Officers should be acquainted with the fact, because it might be very helpful in any negotiations which had to be carried out quickly.

The Council agreed that the Officers should be empowered to act in the matter as suggested.

In connection with the Jockey Club committee on the doping of racehorses it was reported that verbal evidence had been given on behalf of the College by the President, Mr. J. M. Ingram and the Registrar on January 20th, in which the attention of the committee was drawn to the following pronouncement of the College in the Guide to Professional Conduct: "Practitioners who advise the use of a drug for a racehorse or greyhound which might conceivably in any way affect its performances are under an obligation to discontinue the use of the drug at such a period prior to the race that the residue of the medicament has been eliminated.

"In connection with the prescribing of proprietary mixtures, it would, speaking broadly, appear to be

(*Concluded at foot of page overleaf*)

News and Comment

PRODUCTION OF LIVE FOOT-AND-MOUTH DISEASE VACCINES AT PIRBRIGHT

The Parliamentary Secretary for Science announced on May 2nd that the Governing Body of the Research Institute, Pirbright, has been authorised to negotiate an agreement with The Wellcome Foundation Ltd. for the production at Pirbright of foot-and-mouth disease vaccines on a commercial scale for sale abroad. The cost of the buildings involved will be eligible for grant-aid from public funds.

This statement marks an important stage in the development of live modified strain vaccines against foot-and-mouth disease. This work dates from the demonstration in 1951 at Pirbright that unweaned mice could be infected with the virus. Serial passage of the virus through these hosts and also through chick embryos reduces the capacity of the virus to produce the disease in inoculated cattle. While not all strains modified in this way will produce immunity, several have protected a high proportion of cattle against subsequent exposure to the disease. Extensive tests involving approximately 2,000 cattle have been aimed at the preliminary selection of suitable strains, the comparison of different methods of attenuation and many other factors. In the last 2 years a series of trials, first on a small experimental basis and latterly involving several hundred thousand animals, has been undertaken in South and East Africa with the willing co-operation of the Governments concerned. Highly satisfactory results have been obtained in halting the spread of infection from an outbreak and it would seem that such agents have an important rôle to play in the control of the disease.

These results, both at Pirbright and overseas, have led to increasing demands for vaccine. If the Institute were to attempt to continue to produce the large quantities of vaccine which will be required in the near future and at the same time to continue with the investigation of the many production problems, it could only be at the expense of, and to the detriment of, the Institute's programme of research. The Governing Body of the Institute, therefore, concluded that a commercial firm with experience of large-scale vaccine production should be invited to set up at Pirbright an organisation for the production of vaccine.

Since the work must be undertaken at Pirbright within the Institute perimeter, with its elaborate disease security precautions, the Governing Body decided that it would not be practicable to collaborate with more than one commercial organisation.

The Wellcome Foundation Ltd. have long experience in the development of large-scale production of many different virus vaccines used in human and veterinary medicine and this made the Foundation a most suitable party in this association.

R.C.V.S. FELLOWSHIPS

Fellowships of the Royal College have been awarded to Miss C. M. Hoe, for her thesis, *An Investigation into Liver Function in Dogs under Conditions of Health and Disease*, and to Mr. P. R. Greenough for his thesis, *Observations on Some Diseases of the Bovine Foot*.

The R.C.V.S. Council Meeting.—*Concluded.*

undesirable for a practitioner to prescribe any mixture the contents of which are unknown to him, or any drug the action of which is not known.

"The same general principles are applicable to the use of drugs and tranquillisers for show animals. The regulation of the Kennel Club, which prohibits the administration of a drug to a dog which has the effect of making it behave in the show ring in a manner which is not natural, is fully endorsed by the Council."

Examination and Education Committee

This report was presented by Professor H. G. Lamont.

In the matter of animal nursing auxiliaries it was decided to appoint a committee consisting of the following: Mr. G. Atkinson, Mr. S. F. J. Hodgman, Mr. J. McC. Ingram, Miss J. O. Joshua, Mr. D. F. Oliver, and Professor W. L. Weipers.

Finance and General Purposes Committee

A sub-committee on patenting as it applies to the veterinary profession had made a number of recommendations which it was felt should be published to the profession. This important matter is the subject of a separate note, and is published on page 431 of this issue of THE VETERINARY RECORD.

Annual General Meeting

The Registrar reported that the Annual General Meeting would be held on June 7th, in Edinburgh. There would be a service in St. Giles Cathedral in the morning followed by luncheon in the Adam room of the George Hotel. The principal speaker would be the Chairman of the Agricultural Research Council, the Duke of Northumberland. The Annual General Meeting as well as the remaining meetings would be held at the Royal (Dick) Veterinary School.

The Registrar reported that he had been in touch with the Curator of the Museum of English Rural Life of Reading University, who had expressed interest in the preservation of material relating to the history of the veterinary profession. It was agreed that the Registrar and Mr. Barber-Lomax should be invited to prepare an appeal to the profession for the collection and preservation of items of interest, and to take any necessary action.

MR. F. KNIGHT

Dr. W. R. Wooldridge writes:—

The news of Fred Knight's death came as a great shock to me on my return from a trip to Greece, and I would like to say a few words about my association with him over very many years.

I first met Fred Knight in 1932 when I became a member of the Editorial Committee, and I remained in fairly close contact with him from then until his retirement. In those days THE VETERINARY RECORD was run by a committee which met every Monday and discussed the Editorial—often of a political nature—to be published the following week-end. Gradually these Editorials came to be devoted more and more to educational and cognate professional matters.

About 1935 a committee was formed under the chairmanship of Mr. G. P. Male to go into the question of the services provided by the Ministry's veterinary advisers. I was a member of this rather large committee and finally drafted the report for them when the change of name to Veterinary Investigation Officers was suggested.

Not long afterwards another large committee was established to go into the question of the re-organisation of the veterinary profession and I was made chairman of this committee. Its report reflected the chaotic organisation then in being in respect of the veterinary municipal and county veterinary services, and those of the Ministry of Agriculture. Strong recommendations were made concerning many aspects of veterinary policy. Most of these have since been adopted, but they were supported in the report by quoting editorials from a number of professional journals. Mr. Knight was the excellent secretary of both these committees and gave me, as a young man, every assistance, in the preparation and compilation of the data required for them.

About 1938 certain members of the Council recommended that a professional secretary should be appointed and probably be placed over the heads of Mr. Knight and the late Mr. Brown. This move failed, but it was repeated in about 1941 and again failed. After this second attempt I discussed the matter privately with Mr. Knight, whom I then knew very well indeed, as I was helping to organise the National A.R.P. Animal Services from the old B.V.A. headquarters at Gordon Square. I told him I had been one of the supporters of the suggestion made, but that I felt he could allay any future attempts by taking steps to improve his secretarial qualifications and manner of addressing meetings. This he did, and as a result he greatly improved his standing with the Association. I mention this merely to show how loyal he was to the Association and how he was prepared even at a late stage to acquire knowledge that would help him serve his employers even better.

From then onwards I had a close association with him, first as Hon. Secretary and then as vice-President of the Association. During the whole of this period I met him almost daily. He never relaxed his endeavours to carry out his duties to the best of his ability, and he not only arrived early at the office but often remained late, especially during the hectic days of the Survey Committee. He never spared himself, and was willing to discuss matters with any Officer of the Association at any time.

Above all, Mr. Knight was the perfect secretary for a rapidly growing organisation which was fortunate in having a number of members willing to take office and to devote much time and effort to its improvement. He worked happily with all of them. Nevertheless, Mr. Knight was careful never to try to direct policy; but he was always ready to discuss the ideas of his Officers with them and was often able to influence them by bringing to their notice aspects of policy or tradition that might otherwise have been missed. In other words he was meticulous in his endeavour to remain a loyal secretary and to serve the Association fully whilst avoiding any suggestion of becoming a bureaucrat.

I regard the passing of Fred Knight so early in his retirement as a tragic loss to us all, both as a man and as a lifelong servant of the Association. It was characteristic of him that even after he had retired he was always ready to come to headquarters and give the Association further wise counsel.

UNIVERSITY NEWS

Edinburgh

A chair of veterinary physiology has been founded at the Royal (Dick) School of Veterinary Studies in Edinburgh. It was intimated to the University Court that the Queen in Council had approved an ordinance for the foundation.

Liverpool

A special Congregation for the conferment of Honorary Degrees to mark the bringing into use of new buildings for mathematics (with oceanography) and veterinary science will be held on October 28th, 1961. The degree of D.V.Sc. will be conferred by the Chancellor of the University, the Most Honourable the Marquess of Salisbury, K.G., on the following members of the profession:—

Sir John Neish Ritchie, C.B., Chief Veterinary Officer, Animal Health Division, and President of the Royal College of Veterinary Surgeons, 1959-61. Dr. Walter Reginald Wooldridge, Scientific Director of the Animal Health Trust; President of the Royal College of Veterinary Surgeons, 1954; President of the British Veterinary Association, 1941-43.

Among other recipients of honorary degrees will be the Master of Pembroke College, Cambridge, Lord Birkett, and Sir Geoffrey Crowther, Editor of *The Economist*.

The Veterinary Students' Society held its first annual dinner at Reece's Restaurant on April 28th, at 8 p.m. The dinner was well attended by staff and students, though the response from graduates was poor.

A toast to the guests, proposed by Mr. B. C. Rawson, the student vice-President, was responded to by Professor J. G. Wright, Dean of the Faculty. A toast to the Veterinary Society proposed by Mr. J. G. Hamilton, President 1958-59, was responded to by Mr. D. Carter, President of the Veterinary Society.

The evening was very successful and augured well for the future.

R.C.V.S. DAY

The celebration of this annual Day will be held in Edinburgh on June 7th. There will be a Choral Service in St. Giles' Cathedral at 11.30 a.m., and lunch will be at 12.30 p.m. for 1 p.m. in the Adam Rooms of the George Hotel. The principal guest speakers will be the Duke of Northumberland (Chairman of the Agricultural Research Council), and Sir Keith Murray (Chairman, Royal Highland and Agricultural Society). The Annual General Meeting will be held at 3.45 p.m. at the Royal (Dick) School of Veterinary Studies.

THE DUKE OF NORFOLK'S COMMITTEE ON DOPING OF RACEHORSES

The Committee's report, just issued, was, unfortunately, too late for notice this week, having been published after THE VETERINARY RECORD had gone to press. It is hoped to review it in detail in the immediate future.

PERSONAL

Engagement

THOMPSON—NUNN.—The engagement is announced between Filmer George, only son of Mr. and Mrs. F. Thompson, of Chilham, Canterbury, Kent, and Brenda Marjorie, elder daughter of Mr. and Mrs. R. Nunn, of 67, Vicars Moor Lane, Winchmore Hill, N.21.

Marriage

HORN—COOKE.—In London on April 4th, 1961, William Renton Horn, M.R.C.V.S., to Eleanor Mary Cooke. Present address: "Redcote," Oakdale Avenue, Frodsham, Cheshire.

Births

HOWARD.—On April 30th, 1961, to Celia, wife of John Howard, both M.R.C.V.S., at 176, Hall Road, Norwich, Norfolk, a son, brother for Anthony, Jennifer and Susan.

LLOYD.—On April 27th, 1961, to Anne, wife of Trevor Lloyd, B.V.SC., M.R.C.V.S., at Westbank, Stottesdon, a son, brother to Wendy and Geoffrey.

WILLIS.—On April 22nd, 1961, to Gillian (*née* Wickens, B.V.M.S., M.R.C.V.S.), and John Willis, B.SC., A.M.I.E.E., at 18, Woodgreen Road, Luton, Beds., a son, Adam Mark Simon, brother for Nicholas.

COMING EVENTS

May

9th (Tues.). EASTERN COUNTIES VETERINARY SOCIETY. Spring Meeting at the Angel Hotel, Bury St. Edmunds, 12 noon.

10th (Wed.). SUSSEX VETERINARY SOCIETY. Annual General Meeting at the Old Ship Hotel, Brighton, 2.30 p.m.

WESTERN COUNTIES VETERINARY ASSOCIATION (DEVON BRANCH). Meeting at the Ship Hotel, Crediton, 7.30 p.m.

WELSH BRANCH. Meeting at the Conference Room, N.A.A.S. Headquarters, Trawscoed, 2 p.m.

DUMFRIES AND GALLOWAY DIVISION. Annual General Meeting at the Stuart Hotel, East Kilbride, at 12 noon.

11th (Thurs.). NORTH WILTS. VETERINARY CLUB. Meeting at the Goddard Arms Hotel, Swindon, 7.45 p.m.

12th (Fri.). MIDLAND COUNTIES VETERINARY ASSOCIATION. Annual General Meeting at Avoncroft Cattle Breeders Ltd., Sugarbrook House, Stoke Prior, Bromsgrove, Worcs., at 2.30 p.m.

17th (Wed.). CORNWALL VETERINARY CLINICAL CLUB. Meeting at the Red Lion Hotel, Truro, 7.30 p.m.

18th (Thurs.). SUPPLEMENTARY VETERINARY REGISTER DIVISION. Council Meeting at 7 Mansfield Street, Portland Place, London, W.1, 2 p.m. followed by the Annual General Meeting at 2.30 p.m.

B.S.A.V.A. SOUTH EASTERN REGION (4). Annual General Meeting at the Royal Mount Ephraim Hotel, Tunbridge Wells, at 8 p.m.

24th (Wed.). SOCIETY OF PRACTISING VETERINARY SURGEONS. Annual General Meeting at the Randolph Hotel, Oxford, 2.30 p.m.

25th (Thurs.). MIDLAND COUNTIES VETERINARY ASSOCIATION. Annual Dance at the Penn Hall Hotel, Sutton Coldfield.

WESTERN COUNTIES VETERINARY ASSOCIATION. A meeting at the Hotel Victoria, Newquay, Cornwall, at 2.30 p.m.

26th (Fri.). R.V.C. STUDENTS' UNION SOCIETY. Annual Ball at the Park Lane, Hotel, Piccadilly, 8 p.m.

27th (Sat.). CHIRON CLUB. Annual Reunion Dinner-Dance at the Grand Atlantic Hotel, Weston-super-Mare.

B.S.A.V.A. SOUTHERN COUNTIES (Region 6). Annual General Meeting at the Royal Hotel, Winchester, at 7 p.m.

30th (Tues.). SOCIETY FOR THE STUDY OF ANIMAL BREEDING. Meeting at the Royal Society of Medicine, 1 Wimpole Street, London, W.1, 11.30 a.m.

VICTORIA VETERINARY BENEVOLENT FUND. Annual General Meeting at the Royal Veterinary College, Royal College Street, Camden Town, London, N.W.1, 2.30 p.m.

June

9th (Fri.). R.A.V.C. OFFICERS' CLUB. Annual Dinner at the Naval and Military Club, 94 Piccadilly, W.1.

10th (Sat.). R.V.C. 1952 Club's Annual Reunion. Dinner at "Ye Millar of Mansfield," Goring-on-Thames.

September

3rd to 9th (Sun. to Sat.). 79th Annual Congress of the British Veterinary Association at Oxford.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Ches. Beeston Gate Farm, Beeston, Tarporley; Meadow House Farm, Meadow Bank, Winsford (Apr. 25).
Essex. High Warren, Theydon Mount, Epping (Apr. 26).
Hants. Shalden Green Cottage, Alton (Apr. 25).
Staffs. Acton Hill Farm, Whitmore, Newcastle (May 1).

Fowl Pest

Essex. Common Farm, Ramsden Heath, Billericay (May 1).
Glos. The Copelands, Ledbury Road, Staunton (Apr. 28).
Herts. Sheering Lower Road, Sawbridgeworth (May 1).
Kent. Chestnut Bungalow, Ravensdane Wood, Charing, Ashford (Apr. 25).
Lincs. 15 Wignalls Gate, Holbeach, Spalding (Apr. 26).
Norfolk. West Hall, Mundford, Thetford (Apr. 28); 2 St. Leonards, Mundford, Thetford (Apr. 30).
Suffolk. 1 Bungalow, Heath Road, Thurston, Bury St. Edmunds (Apr. 28).
Surrey. Wolesey Spring, George Road, Kingston Hill, Kingston upon Thames (Apr. 26); West Ridge Poultry Farm, Selsdon Vale, Selsdon, Croydon (Apr. 29); The Apiary, Selsdon, South Croydon (May 1).

Swine Fever

Carms. Glynsiw, St. Peters, Carmarthen (Apr. 27).
Ches. The Laurels, Hatherton, Nantwich (Apr. 25).
Durham. Brockstone House Farm, Whinny Hill, Stockton-on-Tees (Apr. 28); 2 Low Startforth, Barnard Castle; The Piggeries, Wharton Street, Garth, Coundon, Bishop Auckland (May 1).
Glam. Coity Walia Common, Bryncethin, Bridgend (Apr. 27).
Hants. 56 Woolston Road, Butlocks Heath, Netley Abbey, Southampton (Apr. 28).
Lincs. Home Farm, Great Limber, Grimsby (Apr. 26).
Moray. Produce Section, Royal Naval Air Station, Lossiemouth (May 1).
Norfolk. 4 Council Houses, Yarmouth Road, Rollesby, Great Yarmouth (May 1).
Northumberland. Hartford Bridge Piggeries, Bedlington, Bedlington Station (Apr. 27).
Notts. Newlyn, Worksop Road, Woodsetts, Worksop (Apr. 28).
Pembs. Berllandeg, Clynderwen (Apr. 28).
Salop. 27 Wrockwardine, Wellington (Apr. 28).
Staffs. Beeches Road Allotments, West Bromwich (Apr. 27); Leatherhill Piggeries, Rugeley (Apr. 28).
Surrey. Goose Rye Farm, Worplesdon, Guildford (Apr. 25).
Sussex. Honer Farm, South Mundham, Chichester (Apr. 28).
Wilts. Mansells Farm, Minety, Malmesbury (May 1).
Worcs. Park Hill Blakedown, Kidderminster (May 1).
Yorks. Mount Airey Butts, South Cave, Brough; Elm Farm, Roos, Hull (Apr. 25); Sunny Bank Farm, Sunnybank Road, Batley; Sycamore Farm, Angram (Apr. 26); Howarth Grange Farm, Brimsworth (Apr. 27).

Letters to the Editor

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

The Future of Animal Husbandry in Overseas Territories

Sir,—With apologies for the delay, I would like to add my contribution to the discussion in your correspondence columns which has followed Mr. Miller's request for comments on his stimulating article published in THE VETERINARY RECORD of January 7th. If I digress somewhat from the "terms of reference," it is to give your readers in Great Britain some idea of the problems of animal husbandry in East Africa.

First, I would question Mr. Miller's statement that many African territories are essentially "meat deficiency" countries and that available supplies have not sufficed to meet local demands. In East Africa, at any rate, this is not the case. There is, of course, some maldistribution of readily available supplies of fresh meat. For example, the tsetse infested areas of the coastal belt, the southern province of Tanganyika and other regions, contain very few cattle, with none to spare for local consumption on any large scale.

However, these regional shortages can be overcome by suitable arrangements for the transport of meat from producer areas to the deficiency regions. At present, meat is generally delivered as live cattle; sometimes by train, but more often "on the hoof" for hundreds of miles along stock routes, on which the cattle may have to be treated by dipping, or with trypanocidal drugs to avoid losses from East Coast fever and trypanosomiasis. Better communications by rail, and all-weather roads would make it possible to kill cattle in producer areas and deliver the meat in refrigerated vans to the meatless zones; but, with certain exceptions, this is not possible at the present stage of development of these territories.

Generally speaking, the potential for meat production in East Africa is high and livestock numbers are sufficient to supply the population with a reasonable ration.

In Tanganyika, with a human population of some 8 millions, there are about 8,000,000 cattle and a combined total of 7,000,000 sheep and goats. The 8 million cattle with a "take-off" of only 10 per cent. would yield 800,000 beasts, equivalent to about 240,000,000 lb. of beef; sufficient to supply 30 lb. per annum for every man, woman and child in the Territory. In addition, there is the potential from the sheep and goats, a few pigs, many poultry, and abundant supplies of fish from the sea and the Great Lakes. Animal protein is, therefore, available, without touching the wild game of the country.

In Kenya, there has been some difficulty lately in selling all the meat available from both African producers and from the farms of European settlers. That there is more than enough for present "home" demands is evident from the efforts made by the Kenya Government to find overseas markets for their meat. Many markets, such as Great Britain, are closed to them on account of continuing rinderpest

infection and foot-and-mouth disease in East Africa. This is a point which stresses the need for a continuation of efficient veterinary services, for the proper control and eventual eradication of these and other diseases.

Some of the surplus meat is exported as canned beef and beef products, even to the United Kingdom; this being allowed as any infection is eliminated by the heat processing involved in canning. In 1959, Tanganyika exported £1,177,000 worth in this way, and in 1960 £1,637,000 worth. Farther north than East Africa, there is evidently some surplus of meat, as Somaliland exports cattle into Kenya from time to time having gained an entry into this market on account of the lower prices accepted for these cattle.

It should be remembered that these results are obtained without any "all out" effort to produce and sell beef and mutton. With the exception of the European-run farms, animal husbandry is still on a very low plane. Furthermore, African stock owners do not sell anything like as many of their cattle as they could, even with present standards of rearing.

For example, Tanganyika Masailand where I am working at present, has an area of 23,000 square miles (15,000,000 acres) which supports a livestock population of nearly a million cattle and half a million sheep and goats. In 1960, the cattle sales through established markets were only 28,000 head. This could easily have been trebled without any improvement in standards of rearing.

However, the pastoral nomadic tribes, such as the Masai, live entirely with and for their cattle and are unwilling to sell many, as their monetary wants are few. Having paid their taxes and bought a few simple requirements such as blankets, spears, ornaments for their dress, and some cereals to supplement their diet of milk and meat obtained from their own herds, their interest in consumer goods wanes. Their present commitments for taxation and limited needs, are easily met by the present level of cattle sales. They, like many other tribes, regard cattle as a bank account and prefer their wealth in this form rather than as cash.

The fallacy of this philosophy has been well demonstrated this year, with the failure of the rains. Thousands of cattle have died in Masailand. Many could have been sold when they were in good condition and the wealth would have been saved.

This hoarding of cattle rather than cash or goods has led to overstocking, with consequent deterioration of the pastures and the development of soil erosion. The present drought has resulted in large scale unavoidable de-stocking, which, if done voluntarily over the years past, would have left the pastures in better shape, with some reserve for the drought period. Cattle have died through lack of grazing and not for want of water; as many permanent water supplies are available from rivers and springs, and numbers of dams and bore-holes have been installed.

The word "overstocking" may lead to some misunderstanding. In actual fact, Masailand—like many other parts of East Africa—is only overstocked by the present standards of the carrying capacity of the land. With proper control of livestock numbers to give time for rehabilitation of the ranges, improvement of grasslands, and rotational grazing, the carrying capacity could be trebled. Furthermore, with improved grazing, the cattle would mature more quickly and the production of actual marketable beef would be increased still further. With its generally good soil and an annual rainfall of 25 to 30 inches, Masailand is potentially better cattle country than many parts of the cattle rearing areas of America and Australia.

Disease control is of prime importance for the future of animal husbandry. The surplus cattle of East Africa would soon disappear if veterinary services were not maintained efficiently. In the case of rinderpest, the Governments of emergent countries might be lulled into a false sense of security, as relaxation of control would not result in any immediate calamity, a high degree of "herd immunity" having been maintained until now by annual vaccinations. It might be some time before a dangerously susceptible cattle population developed, but a point would be reached eventually, when conditions would become favourable for a major pandemic. In the case of the more insidious contagious bovine pleuro-pneumonia, it could take even longer before the effect of relaxation of present quarantines was seen; but sooner or later, the disease could become widespread with resultant heavy losses.

Up to the present, disease control has advanced much more than improvements in animal husbandry and this imbalance has resulted in the present "overstocking." If veterinary departments had been able to enforce improved range management, culling, and selective breeding concomitantly with disease control, the present-day picture would be very different.

To consider another aspect of disease complicating livestock management, it should be noted that large tracts of country are uninhabitable for cattle on account of tsetse fly; and other areas have comparatively few cattle as a result of enzootic East Coast fever which takes its toll of 40 to 80 per cent. of the calf crop each year. The result of these two major factors is that cattle are concentrated in the areas free from tsetse and East Coast fever, which are consequently over-grazed.

If large scale tsetse clearings were undertaken and wholesale dipping introduced to control East Coast fever—as done on European owned farms—many thousands of square miles would be made available for the Africans' cattle. This would allow spreading of the cattle population and relief of pressure on the ranges; but the situation would deteriorate in time, without proper control of grazing and numbers of livestock.

Mr. Miller raised the question of milk supplies. There are shortages, but again the potential is there. The Zebu cow under present conditions of African management is a very mediocre producer; but with proper feeding and a very little selective breeding, its production can easily be raised. This has been well shown on Government demonstration farms and on those of European settlers. Even under existing conditions there is often a temporary surplus of milk from the large herds in the wet season when grazing

is abundant. This could be maintained longer if grassland was conserved and some dry season feed supplied. Much of the seasonal surplus of milk could be concerted into ghee, butter, or cheese; but here again we are up against the indolence of the average African peasant and his preference for leisure rather than profit.

Generally, no attempt is made to use cattle for the improvement of the land. Little use is made of manure; and worked-out cultivations are simply abandoned to be covered with weeds. If these were planted with grass and leys established, more cattle feed and restoration of fertility would result; but the African farmers show little interest in following the advice of agriculturalists, with some exceptions, of course.

Until such time as the pastoral tribes and even the more settled ones owning cattle can see the advantages of better cattle, the rôle of livestock in mixed farming and the sale of surplus for cash, the chances of real improvement in animal husbandry are slim.

With the arrival of independence, it is possible that the turn of events may go far to solving the problem. Territories gaining full independence will not be able to rely on financial help from outside sources as much as they have in the past; and questions such as the balance of payments will arise.

There is no doubt that the emergent countries will strive to maintain or improve their standards of living and public services; and the local populations can therefore look forward to higher taxation which will compel them to sell more cattle and other agricultural produce. Production, including livestock production, will have to increase to help the countries' economies and, in time, the advantages of and indeed the necessity for, better land usage for both arable and livestock farming may be realised. When this occurs, stock owners may be more inclined to seek and follow the advice of experts and the need for the continuation of efficient veterinary services will be felt.

The point made by Mr. Miller and other correspondents, that animal husbandry should be in the hands of veterinarians is very important. Disease control and livestock management are closely entwined and veterinary surgeons are in a better position to appreciate the over-all picture than are any other advisers.

Our profession could and should take over the whole complex problem of organising disease control, livestock improvement, pasture improvement and range management. The help of other experts, such as botanists, biochemists and soil chemists is very necessary; but we are the ones best fitted for the over-all direction. However, as Sir Frank Ware (January 14th) and Mr. Neave (February 11th) have pointed out, perhaps we have been too self-effacing in matters of animal husbandry and have tended to think too much in water-tight compartments in confining our main interest to disease alone.

Our new graduates would be fitted better still if our veterinary schools paid heed to Sir Frank Ware's views and adjusted their curricula so that students were given a broader outlook and encouraged to regard an understanding of ecology and animal husbandry as one of the important weapons against disease.

The fact that disease is influenced by environment and animal husbandry, and *vice versa,* has too often been forgotten by those responsible for shaping policies in overseas territories.

Mr. Miller mentioned the possibilities of utilising wild game as a source of protein for the human population. Game animals have many advantages in semi-arid country and it has been shown that they are, in fact, better producers of protein in terms of pounds per acre than are domestic animals. As Mr. Miller said, they are less susceptible to disease and can survive in tsetse fly country which would be lethal to cattle. Furthermore, their adapted physiology and ability to go for long periods without water allow them more freedom of movement, enabling them to scatter over wide areas far removed from water in the dry seasons and also to utilise coarse dry vegetation which would be useless to cattle.

The varied selective grazing and browsing habits peculiar to each species of wild herbivore enable the game population as a whole to make fuller use of available feed without ill effects on the flora. This is in contrast with the close herding and selective grazing of cattle, which often leads to elimination of the more palatable and nutritious grasses early in each season, with the result that these grasses are steadily depleted and the less palatable and coarse varieties, including scrub bush, gain ground.

The ability of game to make full use of its environment has given rise to the idea that organised cropping of certain predominant species should be undertaken to provide animal protein. This is desirable only if meat from domestic cattle is not available, and is practicable only in certain areas. The great game-supporting tracts of country are often remote from centres of human population, and the difficulties of cropping game as and when required, processing the meat, and delivery to consumer areas, would be great and probably quite uneconomic in many cases. Furthermore, if game meat were to be made readily available in countries with big cattle populations, the sales from the latter might easily be depressed and the matters of overstocking and bad pasture management would be aggravated.

The idea of game cropping has received much support from the Game Department and Game Park Managements, as an argument to justify the preservation of game on economic grounds, but this is hardly necessary in my opinion. I think it is generally appreciated, even by the new governments in Africa, that the tourist trade is a valuable asset to a country's economy and that it is attracted by Africa's wild life.

Game can be, and is, protected in Game Parks and other protected areas, many of which are of vast size. If these are maintained, on account of their value to tourism, no further excuse need be offered for game conservation. On the other hand, good animal husbandry and disease control are often impossible when game and cattle are intermingled, and separation of the two interests may well be necessary.

To complete this sketch of the complexity of

animal husbandry problems in East Africa, I would like to take a little more of your space, Sir, to mention the question of preservation of forests; a side issue which may not be appreciated by your readers in Great Britain.

The rain forests on the mountainous catchment areas are all-important for the encouragement of the rainfall and for the life of the permanent springs; both essential for the growth of pasture and preservation of permanent water supplies.

Forests may be depleted by uncontrolled felling of trees for fuel and building purposes and by the extension of grass fires from the plains, or by fires started by such agents as honey hunters, or cattle owners entering the forest with their herds in search of grazing in the dry season. Whatever the cause, depletion of the forests results in deterioration of catchment areas and diminution of rainfall. These have their effect on grazing and permanent water supplies and so on animal husbandry.

We see, therefore, that agriculture, disease control, animal husbandry, forestry, water development, and game preservation and control, are all inter-related and provide spheres of activity for expert advisers who, working together with respect for each other's problems, can do much to preserve and develop the African's environment.

Our profession can continue to play a very important part in this scheme of things and it is hoped that the emergent countries will appreciate the need for the services which we are best fitted to provide. It will be many years before the new African states have a cadre of their own veterinarians and, in the meantime, they will have to rely on help from outside. In doing so, they will do well to remember the market value of veterinary surgeons in the world as a whole and be prepared to offer terms and conditions of service which will attract and retain expatriate veterinary surgeons of the right calibre. In this way, the exodus mentioned by Mr. Matson (January 21st) may be prevented.

In conclusion, I would add that veterinary and agricultural departments could have achieved much more in African territories if they had had better co-operation from the local inhabitants. The *Pax Britannica* has precluded any sort of compulsion to follow good advice. Our faith has been pinned, on the idea that education would, in time, bring the natives round to an appreciation of our ideas. This does happen, but it is a long, slow process. It is possible that the new Governments will realise this and will not be so diffident in introducing legislation to make their own people adopt proper methods of agriculture, animal husbandry, and disease control.

Yours faithfully,

F. G. WADDINGTON.

Monduli,
Masailand,
Tanganyika.
March 31st, 1961.

Sir,—May I refer to Mr. W. J. Herbert's letter in your journal of April 8th and, in particular, to his comments on the D.T.V.M. course. The grant to Edinburgh University for the years 1955 to 1959 was £16,000, and in addition £12,000 was set aside for the payment of subsistence allowances to officially sponsored students from overseas territories. It was agreed that should continuation of the course be justified after the initial 5-year period the cost involved would then be met from University funds. When the University decided to continue the course, however, the Colonial Office was again asked if support could be extended for a further 2 years. The grant was not withdrawn as stated. Owing to the reduction in number of dependent territories and lack of flexibility in the use of Colonial Development and Welfare funds the annual grant was reduced from £3,000 to £2,000, but £1,200 was set aside to assist University teachers to pay visits abroad and a subsistence allowance allocation retained.

It is perhaps worth noting that funds, whether C.D. and W. or those available to the University Grants Committee come from the same source, and that, strictly speaking, the financing of courses like the D.T.V.M. or a degree course in tropical veterinary medicine, as suggested by Mr. R. M. Arnold in his letter of April 8th, should come from the latter rather than the former and overcome, at the same time, the odious "Colonial" label.

Yours faithfully,

R. S. MARSHALL,
Animal Health Adviser.

Colonial Office,
Sanctuary Buildings,
Great Smith Street, S.W.1.
April 19th, 1961.

The Future of the Profession

Sir,—Poor Mr. Cassells, he swallowed my bait, hook, line and sinker. An endeavour was made to find out supporters of nationalisation. It was successful.

Mr. Cassell's reply is full of wrath, and his remarks fly around in what appears to be hysterical frustration. They certainly made most amusing light entertainment to read.

I presume, of course, that Mr. Cassells will admit to an admiration of left-wing politics? I for my part, freely admit to being an ardent right-winger—ivory headed, juvenile minded; (how good it is to retain a youthful mind—a most pleasant compliment). I am also a wholehearted supporter of the Hyde Park Corner system. It is a true reflection of our democratic way of life. I am sorry Mr. Cassells disagrees with this principle.

The phrase "woolly-headed left-winger" is a well known political term; Mr. Cassells himself, has interpreted this as "immoral half-wit." This was not my intention.

Mr. Cassells appears to be a man who is disappointed in his chosen profession. I get the impression that the long, arduous hours in private practice are not to his liking. It would appear that he would prefer a pleasant 9 a.m. to 5 p.m. 5-day week type of practice—and he hopes nationalisation will provide it.

Several years ago I found a ready answer to the absence of a hospital, X-ray, laboratory, etc. I

worked damned hard and made certain I got them. I recommend this method to Mr. Cassells. It really is most rewarding in every sense.

Yours faithfully,
R. S. TOWNSON.

123, King Street,
Maidenhead.
April 24th, 1961.

Pseudomonas Infection in Captive Wild Animals

Sir,—The report by Gardiner and Craig on the generalised Pseudomonas infection in a cow published in Volume 73 of THE VETERINARY RECORD, April 15th, is of considerable interest. I have often wondered why generalised infections with this organism have not been more widely reported in veterinary literature. Organisms of the Pseudomonas group are undoubtedly responsible for losses from time to time in a wide variety of wild animals kept in captivity. I give below a list of cases which have occurred during the last 3 years in the London Zoo.

Primates

Indonesian Gibbon (*Hylobates moloch*). The gibbon died as a result of *Shigella flexneri* infection, *Pseudomonas aeruginosa* being also isolated from the gut. The Pseudomonas was possibly non-pathogenic in this case.

Carnivora

Jungle Cat (*Felis chaus*). This died as a result of pneumonia due to *P. aeruginosa* infection.

Weasel (*Mustela nivalis*) died as a result of haemorrhagic enteritis affecting the lower two-thirds of the large bowel, associated with *P. aeruginosa* infection.

Stoat (*Mustela erminea*) died as a result of an enteritis affecting small and large bowel associated with *P. aeruginosa* infection.

Striped Skunk (*Mephitis mephitis*) died as a result of enteritis and ulceration affecting the small intestine associated with *P. aeruginosa* infection.

Himalayan Black Bear (*Selenarctos thibetanus*) died as a result of enteritis and hepatitis associated with *P. aeruginosa* infection.

Two Polar Bears (*Thalarctos maritimus*). Both bears died as a result of septicaemia associated with *P. aeruginosa* infection.

Rodentia

Chinchilla (*Chinchilla laniger*). Infection with *Pseudomonas* spp. is a common cause of death amongst chinchillas. The disease may take the form of enteritis, nephritis or septicaemia.

Artiodactyla

Blesbok (*Damaliscus dorcas phillipsi*). The Blesbok died as a result of injury, *P. aeruginosa* being a secondary invader of the wounds and causing a septicaemic condition.

Impala (*Aepyceros melampus suara*). The impala died as a result of pneumonia and septicaemia which was secondary to infected wounds associated with *P. aeruginosa*.

Marsupialia

Great Grey Kangaroo (*Macropus canguru*). This kangaroo died as a result of pneumonia associated with *P. aeruginosa* infection.

Virginian Opossum (*Didelphis marsupialis virginianus*). The opossum died as a result of gastritis and septicaemia. There was also splenitis and *P. aeruginosa* was isolated from the spleen.

Squirrel-like Flying Phalanger (*Petaurus norfolcensis*). This animal died as a result of gastritis and duodenitis associated with *P. aeruginosa* infection.

Sirenia

Manatee (*Trichechus manatus*). This manatee died as a result of septicaemia associated with *P. aeruginosa* infection.

This organism is thus, as in man, a potential source of danger to many groups of animals. It may cause local lesions in the bowel or it may enter the body proper either by way of the urinary tract or from wound infection and can set up a wide variety of fatal lesions ranging from pyelo-nephritis to septicaemia.

Yours faithfully,
R. N. FIENNES,
Pathologist, London Zoo.

The Zoological Society of London,
Regent's Park,
London, N.W.1.
April 21st, 1961.

Eperythrozoon Infection in Sheep in Scotland

Sir,—Although eperythrozoon infection in sheep has been recognised in South Africa, Algeria, France, Iran, North America and Australia (Littlejohns, 1960) and in Norway (Overoes, 1959), it has not hitherto been recorded in Great Britain.

In November, 1960, a sheep in a tick-borne fever experiment was found to be infected with a parasite morphologically indistinguishable from *Eperythrozoon ovis*, as described by Neitz *et al.* (1934). The infection was transmissible to other sheep by intravenous inoculation and recovered sheep resisted reinfection.

As the condition had not previously been recognised in the examination of blood films in the course of many years of tick-borne fever research, and as home-reared sheep appeared to be fully susceptible, it seemed probable that the infection had been recently introduced to the Institute. A survey of random samples of various groups of sheep on experiment showed that 2 foci of infection were present, one (focus A) in house-reared sheep housed in a block of loose-boxes, and the other (focus B) in a large covered yard some 200 yards distant.

A possible source of infection in focus A was a sheep which had been brought in for diagnosis from a farm in Peeblesshire in September, 1960, and housed in one of the loose-boxes. Although attempts to demonstrate the infection in this sheep were unsuccessful the disease was transmitted to a susceptible sheep by inoculation of a pool of blood samples taken at random from ewes on the farm of origin.

Focus B consisted of 71 hoggs purchased at Hawick market in October, 1960. When examined in February, 1961, eperythrozoa were seen in blood

smears in 7 of these animals. Although the yard also housed approximately 500 other sheep penned in groups separated by single fences, 50 random blood samples from sheep in other groups failed to show eperythrozoon infection either microscopically or by transmission to susceptible sheep. The farms of origin of the infected group were situated in Selkirkshire, Roxburghshire and Berwickshire. Pooled blood samples from 35 to 40 hoggs on each of these farms were inoculated into 3 susceptible sheep. The sheep inoculated with blood from the Roxburghshire farm developed eperythrozoonosis. Thus 2 completely separate sources of infection have been identified which suggests that the condition may be widespread.

A study of the pathogenesis of the parasite is in progress and results will be published on completion. The main characteristic of the disease is a haemolytic anaemia lasting from 4 to 8 weeks. None of the experimentally infected animals has died and in most there has been surprisingly little loss of condition. Although on source farm A a number of cases of unexplained pining occur it has not yet been shown that this condition is a sequel to eperythrozoonosis.

I wish to thank Dr. J. S. F. Niven and Dr. A. W. Gledhill who confirmed the presence of eperythrozoon in blood films, and also the stock-owners of the suspected farms for their ready co-operation in allowing the collection of blood samples from their flocks.

Yours faithfully,
ANGUS FOGGIE.

Animal Diseases Research Association,
Moredun Institute,
Gilmerton,
Edinburgh.
April 28th, 1961.

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The Dave Douglas Fund

Sir,—Liverpool graduates will be shocked and saddened to learn of the sudden death of Dave Douglas at the early age of 46.

Dave spent 30 of those years at the Veterinary Hospital in Pembroke Place and was respected and beloved by students and staff alike. No longer will the familiar figure in white coat and trilby be seen cheerfully and efficiently carrying out his duties.

It is anticipated that many ex-students and staff would wish to show their appreciation of Dave by subscribing to a fund in aid of his widow and 2 children. Such a fund has been started by local practitioners, and contributions may be sent to, and made out to, The Dave Douglas Fund, c/o Martins Bank, Myrtle Street, Liverpool, 7.

Yours faithfully,
PETER O. RANDLE.

8, Mersey Road,
Liverpool, 17.
April 24th, 1961.

Sir,—I believe that practitioners in the Liverpool district have instituted an appeal for financial assistance for the widow and children of the late David Douglas.

May I support this appeal through your columns? David Douglas died most suddenly and it is feared that his widow and family may be in some financial difficulty. Those Liverpool graduates and local practitioners who received help and friendship from David during their student days and later may like to contribute and assist his dependents.

Yours faithfully,
A. C. SHUTTLEWORTH.

The University of Liverpool,
Veterinary Hospital,
Pembroke Gardens,
Liverpool, 3.
April 25th, 1961.

Toxicity in Fowl due to Hardwood Litter

Sir,—A toxic syndrome has been observed among fowl of several breeds kept for periods up to a month on a litter obtained from a local joinery works. The litter consists of sawdust and shavings from various species of hardwood, the main species identified being *Entandophragma cylindricum* and *Triplochiton scleroxylon*, both mahoganies used in furniture manufacture.

Attention was first drawn to the syndrome by the appearance of external lesions. These consisted first of a thickening of the tissues under the scales of the legs and feet, with consequent raising of the edges of the scales. A condition resembling *Cnemidocoptes* infestation is the result, but the lesions are consistently free of parasites. Later, a characteristic scurfy condition of the skin occurs, particularly on the back and on those parts of the thorax covered closely by the wings, and in these areas the skin becomes markedly thickened. Secondary infestation of the resultant plaques may occur. Occasionally lesions occur on the comb and wattles.

Microscopically, these lesions show a marked hyperkeratosis, and in view of this, lesions were looked for elsewhere.

There is a general debility and a very marked loss of weight. At *post-mortem* examination, the liver is usually found to be enlarged, and hard in texture, and there is excoriation of the mucosa of the proventriculus. The kidneys are congested and there is a catarrhal sinusitis. Occasionally, in advanced cases, the conjunctival sac is filled with a white cheesy exudate, like that seen in grave vitamin A deficiency, with displacement of the eyeball. The air sac membranes are thickened and tough.

Microscopically, the liver shows congestion and marked necrobiosis of the parenchyma, with proliferation of reticular tissue, slight proliferation of bile duct epithelium and considerable cellular infiltration in the region of the portal canals. In these areas many of the cells are heterophils. In addition, there is an accumulation of haemosiderin in the liver.

If the fowl are removed from the litter, the necrotic

process appears to stop, but regeneration of liver cells is very slow and is probably never complete. Even after 3 or 4 months, only slight regeneration is seen, and the fowl do not thrive. The kidneys show a glomerulitis and a degenerative condition of the tubules. The tips of the villi of the proventriculus are eroded and the cells of the glands of the propria become detached from their basement membrane.

If the fowl are left on the litter, nervous symptoms are shown, with lameness and inability to extend the digits properly; finally the bird cannot remain upright, even with the support of a wing. There is occasional torticollis.

The syndrome is very reminiscent of hyperkeratosis as seen in cattle, and of vitamin A deficiency. It is possible that the toxic factor, for which a search is being made, may be a vitamin A depressant.

A fuller account of the condition will be published in due course, when investigations are complete.

Yours faithfully,
BRENDAN HALPIN.

Veterinary Investigation and Training Centre,
Private Mail Bag 28,
Mando Road,
Kaduna,
Nigeria.
April 17th, 1961.

An Unexplained Condition of Pregnant Ewes

Sir,—With regard to the letter from Messrs. Philcox and Pepper about prolapse of the cervix and vagina in the ewe, these two conditions appear to be due to the same cause as the prolapse of the bowels described by White and others; *i.e.* insufficient room in the abdomen owing to an advancing multiple pregnancy.

Whilst it is necessary to adopt some immediate measure such as tying the wool or stitching the vaginal lips, in my opinion the essential item of treatment is to starve the ewe for 24 hours, allowing only water, and then feed only concentrates in limited amounts, with water *ad lib*. The ewe should not be turned out or have an increased diet until after lambing.

In those cases which must be stitched, because tying the wool is insufficient to ensure retention, the risk is that the ewe might not be seen commencing to lamb, and might try to lamb through the stitches. This causes very serious laceration of the vagina, and probably a recto-vaginal fistula.

After starving for 24 hours the stitches may usually be removed, though in cases in which there is much excoriation there is some advantage in leaving the stitches in a further 48 hours, if lambing is not imminent. When this method is used the lambs usually survive.

Yours faithfully,
DONALD SINCLAIR.

Southwoods Hall,
Thirsk,
Yorks.
April 24th, 1961.

Castration by Rubber Ring

Sir,—We were interested to read of Mr. E. P. Nelson's and Mr. D. G. Williams's experiences with castration by rubber rings (*Vet. Rec.* **73.** 154, 228).

This method of castration has been used by us on approximately 200 West African dwarf sheep and goats, the ring being applied at one week of age.

Normally, no trouble is caused beyond a slight awkwardness of gait for the first 24 hours, and the scrotum atrophies and falls away after 5 or 6 weeks.

Recently, however, 2 kids died at the age of 14 weeks. They had been growing normally and only one showed symptoms of stiff gait and lack of appetite 24 hours before death. The other died during the night with no previously observed symptoms.

Post-mortem examination of the first kid revealed a severe haemorrhagic cystitis, with an ascending pyelo-nephritis, an urethra blocked by small stones and fluid in the abdominal and thoracic cavities. Pneumonia was starting to develop.

The second kid had an urethral obstruction as a result of stones passing from the bladder. The bladder wall was slightly inflamed and a severe hydro-nephrosis was present. In the abdominal cavity there was approximately 100 c.c. of clear fluid.

We still regard the rubber ring, however, as one of the most reliable methods for the tropics, where flies, wound infection and tetanus are the major problems.

Yours faithfully,
D. ZWART,
J. L. JOLLANS.

School of Agriculture,
Kumasi College of Technology,
Kumasi,
Ghana.
April 21st, 1961.

Possible Parturient Hypocalcaemia in a First-calf Heifer

Sir,—At the beginning of March I was called to see a newly calved cow down in a field half-way up the northern slopes of the North Downs.

The animal was a Shorthorn heifer of 2½ to 3 years, in poor condition, which had just had a live average-sized female calf and also had cleansed. It was lying on its right side, propelling itself in a circle gradually, with its convulsive leg-movements. The temperature was 100.5° F., the pupils were dilated, and the animal exhibited muscular tremors, twitching of the eyelids and pale mucous membranes.

Treatment consisting of 350 ml. of a calcium borogluconate, magnesium hypophosphite and dextrose solution was given intravenously, and a blood sample taken. The animal was taken later to the farm buildings in a van. It was light enough for 2 men to be able to pick it up for loading.

Next day it was still recumbent, but calm and alert with no muscular tremors nor twitching. The temperature was 101.5° F. Dextrose, 500 ml. of a 40 per cent. solution was administered intravenously. The following day the heifer was up and eating.

The blood sample, kindly examined by the Biochemistry Department, Central Veterinary Laboratory, Weybridge, showed 7.0 mg. p.c. calcium, 1.0 mg. p.c. magnesium and normal acetone levels. A faeces sample examined for parasitic eggs was negative. Diet for the 3 months before calving consisted of grass, of which there was little, and hay at the rate of 12 bales for 30 in-calf heifers (owner's estimate). This animal being one of the smallest, presumably did not get very much.

This was probably not a true parturient hypocalcaemia associated with a sudden large udder demand as there was hardly any udder. It was possibly due to a low calcium intake over a long period with the superimposed stress of parturition.

It may be argued that it was primarily a hypomagnesaemia with the concurrent fall in serum calcium which often occurs in hypomagnesaemia. However, if we take 1.8 mg. p.c. as the average lower limit of the normal serum magnesium range, and 8.5 mg. p.c. as the average lower limit of the normal serum calcium range, the fall in magnesium in this case is not markedly greater than the fall in calcium. Nor have any of the remaining 29 heifers yet produced any signs of clinical hypomagnesaemia.

The heifer has now put on weight with a reasonable diet, and is producing 1½ gallons of milk per diem.

Yours faithfully,

3 Oak Tree Close, G. K. MACLACHLAN.
Jacobs Well,
Guildford.

April 27th, 1961.

Cerebrospinal Arteriolitis in Pigs

Sir,—We have been interested for some years in a condition of cerebrospinal arteriolitis in pigs.

The clinical signs vary considerably, presumably depending on which parts of the brain are first damaged by the impairment of the blood supply, but common features are apparent blindness, continuous wandering around the walls of the pen, and holding the head in an abnormal position, often upwards and backwards or sideways. Convulsions have not been recorded. The animals usually became affected 2 to 5 weeks after weaning and only 2 or 3 in a litter show signs of disease.

While we have many specimens of the lesions in the central nervous system, for which we are much indebted to our colleagues in the Veterinary Investigation Service, we wish to obtain data on the incidence of similar vascular lesions in other parts of the body. We would, therefore, welcome any opportunity to examine tissues from any available whole carcase from a pig which died after an illness resembling that described above.

Such a specimen could be sent either directly to this laboratory or to the nearest Veterinary Investigation Centre. May we also appeal for as detailed a history as possible?

Yours faithfully,

Pathology Department, J. D. J. HARDING.
Central Veterinary Laboratory,
Ministry of Agriculture, Fisheries & Food,
New Haw,
Weybridge,
Surrey.

April 21st, 1961.

SCIENTIFIC

Foetal Mammary Glands

Sir,—To elucidate the normal cellular content of milk the study of foetal mammary glands might help. The few cells found in normal milk are polymorphonuclear leucocytes and mammary epithelial cells in equal numbers, with occasional lymphocytes. From this brief report it would seem that a similar content would be found in the foetal teat sinus.

Two foetuses, removed from 2 Ayrshire cows *post-mortem*, measured 60 and 75 cm. from poll to anus and were probably about 8 months *in utero*. Over the udder the hair follicle zone was 200μ and the epidermis 30μ thick. The teat epidermis was 70μ thick without glands, follicles or papillae. The fore teats were 7 to 8 mm. and the hind 4 to 6 mm. long. Two gland sinuses were about 2 mm. in diameter. The epithelium of the duct system consisted of an upper layer of dense cells with round or oval nuclei and a lower layer of fewer, less distinct cells with pale nuclei. Under the epithelium of one sinus was a group of 20 polymorphonuclear leucocytes and several groups of 3 were seen more often than in normal adult gland tissue, probably because the foetuses were not bled. Six polymorphs and 6 epithelial cells were found in one sinus.

Yours faithfully,

IAN MACADAM.
Federal Department of Veterinary Research,
Vom,
Northern Nigeria.

April 3rd, 1961.

ERRATUM

It is regretted that in Mr. Sherwin A. Hall's letter last week the word "tracheostomy" was misspelt "tracheotomy."

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN
Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
16th to 31st March 1961		10	—	5	54	—	51
Corresponding period in	1960	12	—	—	57	—	53
	1959	13	—	—	23	—	65
	1958	15	1	3	22	—	56
1st January to 31st March 1961		68	—	98	452	—	300
Corresponding period in	1960	79	—	10	882	—	285
	1959	63	—	1	218	—	288
	1958	52	2	100	195	—	268